Service Manual

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ORDER NO. MAV0406005C3

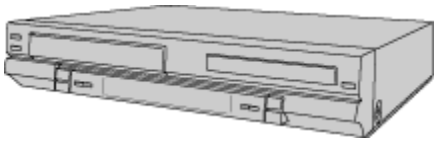
Service Manual

DVD Player/ Video Cassette Recorder

Panasonic VHS Hi-Fi

- NV-VP32GL
  NV-VP32GC
  NV-VP32GCS

R4-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	SOURCE: 220-240V AC 50/60 Hz (NV-VP32GL) 110-240V AC 50/60 Hz (NV-VP32GC/GCS)	AUDIO	HEAD: 1 Stationary head (Normal-mono only) 2 channels (Hi-Fi Sound-Stereo)
	CONSUMPTION: 23 watts		INPUT: AUDIO IN (AV1: REAR) Connector (Phono type) -6dBV (500 mV), More than 47 kΩ AUDIO IN (AV2: FRONT) Connector (Phono type) -6dBV (500 mV), More than 47 kΩ
RECORDING SYSTEM	2 rotary heads, helical scanning system		
	PAL/NTSC		OUTPUT: VHS/DVD, AUDIO OUT Connector (Phono type) -6 dBV (500mV), Less than 1kΩ DVD AUDIO OUT Connector (Phono type) 2Vrms, (1kHz, 0dB, 10kΩ) DVD Optical digital output
PLAYABLE DISCTYPE (8cm or 12cm)	DVD-Video, AUDIO CD (CD-DA), VIDEO CD, CD-R/RW (CD-DA, Video-CD Formatted discs), DVD-RAM/DVD-R (DVD-VR/ Video compatible), MP3/WMA, JPEG, High MAT		
DVD SIGNAL SYSTEM	PAL 625/50, NTSC 525/60		

DVD SIGNAL SYSTEM	PAL 625/50, NTSC 525/60	
PICK UP	Wave length: 662nm/785nm Laser Power: CLASS 2/CLASS 1	
TV TUNER SYSTEM	NV-VP32GL	VHF: CH0-CH12 UHF: CH28-CH69 CATV: CHS1-CHS41
	NV-VP32GC/GCS	VHF: CHE2-CHE12 UHF: CHE21-CHE69 CATV: CHS1-CHS41
RF OUT SYSTEM	NV-VP32GL	PLL (CH28-CH69/OFF) 75 Ω closed
	NV-VP32GC/GCS	PLL (CHE21-CHE69/OFF) 75 Ω closed
VIDEO	HEADS: 4 rotary heads 1 pair for recording and playback (L-R heads) 1 pair for trick play (L'-R' heads)	
	INPUT: VIDEO IN (AV1: REAR) Connector (Phono type) 1.0 Vp-p, 75 Ω terminated VIDEO IN (AV2: FRONT) Connector (Phono type) 1.0 Vp-p, 75 Ω terminated	
	OUTPUT: VHS/DVD VIDEO OUT Connector (Phono type) 1.0 Vp-p, 75 Ω terminated DVD VIDEO OUT Connector (Phono type) 1.0 Vp-p, 75 Ω terminated DVD S-VIDEO OUT (S4P) Y; 1.0 Vp-p, 75 Ω terminated C; 0.3 Vp-p (PAL), 75 Ω terminated C; 0.286 Vp-p (NTSC), 75 Ω terminated DVD COMPONENT VIDEO OUT Connector (Phono type) Y; 1.0 Vp-p, 75 Ω terminated PB/CB; 0.7 Vp-p, 75 Ω terminated PR/CR; 0.7 Vp-p, 75 Ω terminated	

	DVD Optical digital output
AUDIO CHARACTERI -STICS	S/N ratio: Normal More than SP; 43 dB HiFi 65 dB DVD 115 dB FREQUENCY RESPONSE: Normal 80 Hz-8 kHz Hi-Fi 20 Hz-20 kHz DVD (linear audio) 4 Hz-22 kHz (48 kHz sampling) 4 Hz-44 kHz (96 kHz sampling) CD audio 4 Hz-20 kHz
DYNAMIC RANGE	VCR: More than 90 dB DVD (linear audio): More than 99 dB CD audio: More than 97 dB
TAPE SPEED	SP: 23.39 mm/s (PAL), 33.3 mm/s (NTSC) LP: 11.695 mm/s (PAL) EP: 7.796 mm/s (PAL), 11.1 mm/s (NTSC) Record/Playback Time: (PAL) SP:4 hours with 240 min. type tape LP:8 hours with 240 min. type tape EP:12 hours with 240min type tape FF/REW Time: 60sec. with 180 min. type tape JET REW Time: 43 sec. with 180 min. type tape
REGION NUMBER	Region No. 2 and No. 3
OPERATING TEMPERATURE	5˚C - 35˚C
OPERATING HUMIDITY	35% - 80%
DIMENSIONS	430 (W)×89(H)×266(D) mm
WEIGHT	4.0 kg
STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. AC Mains Lead (NV-VP32GL/GCS) 2 pc. AC Mains Lead (NV-VP32GC) 1 pc. Infra-red Remote Controller 1 pc. AV cable

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 INTRODUCTION

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1.1 INTRODUCTION

1.2 ABOUT LEAD FREE SOLDER (PbF)

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1.1 INTRODUCTION

This service manual contains technical information which will allow service personnel to understand and service this model.

If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

Note:

1. Adjustment procedures, Disassembly Procedures and Assembly Procedures for Mechanism Chassis are separate volume from this service manual.

   Please refer to the service manual for R4-Mechanism Chassis. (Order No. VRD0202010C8)

2. The Model No. is indicated on the Schematic Diagram and Circuit Board Diagrams as follows.

Model No.	Indication Mark
NV-VP32GL	(GL)
NV-VP32GC	(GC)
NV-VP32GCS	(GCS)

1.2 ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:

- Pb free solder has a higher melting point than standard solder, Typically the melting point is 50-70°F (30-40°C) higher. Please use a high temperature soldering iron. In case of soldering iron with temperature control,please set it to 700±20°F (370±10°C)

- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

2 SAFETY PRECAUTIONS

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2.1 GENERAL GUIDELINES

2.1.1 LEAKAGE CURRENT COLD CHECK

2.1.2 LEAKAGE CURRENT HOT CHECK (See Figure 1 .)

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2.1 GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

2. After servicing, confirm that all the protective devices such as insulation barriers, insulation papers shields are properly installed.

3. After servicing, do the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.1.1 LEAKAGE CURRENT COLD CHECK

2.1.2 LEAKAGE CURRENT HOT CHECK (See Figure 1 .)

2.1.1 LEAKAGE CURRENT COLD CHECK

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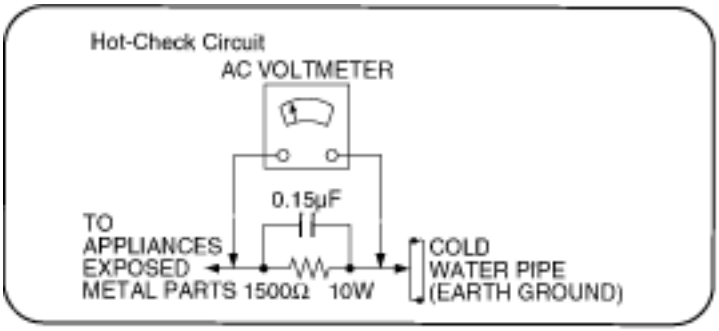
1. Unplug the AC cord and connect a jumper between the two prongs on the plug.

2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to thechassis, the reading should be between 1MΩ and 5.2MΩ.

   When the exposed metal does not have a return path to the chassis, the reading must be

Figure 1



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2.1.2 LEAKAGE CURRENT HOT CHECK (See Figure 1 .)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.

2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1 .

3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.

4. Check each exposed metallic part, and measure the voltage at each point.

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.

6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to do the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outsideof the limits specified, there is a possibility of a shock hazard, therefore the equipment should be repaired and rechecked before it is returned to the customer.

3 PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistorsand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available dischargingESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, alminum foil or comparableconductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD)sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

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4 PRECAUTION OF LASER DIODE

CAUTION:

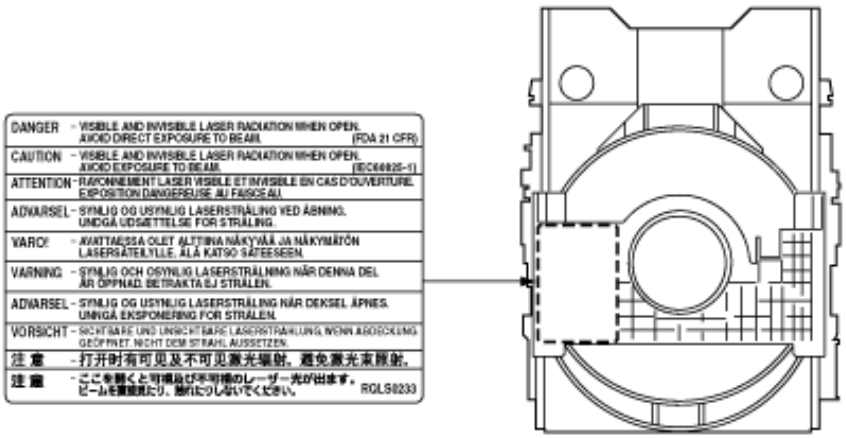
This product utilizes a laser diode. When the unit is turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length:658 nm/790 nm
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is at safety level,but be sure of the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Leserstrahlung von der Laserinheit adgestrahit.
Wellenlänge: 658 nm/790 nm
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlungan der Lasereinheit ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.


DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL - SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! - AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING - SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL - SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意 - 打开时有可见及不可见激光辐射，避免激光束照射。
注 意 - ここを開くと可視および不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。
RGLS0233

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

5 PREVENTION OF STATIC ELECTRICITY DISCHARGE

The laser diode in the traverse unit (optical pickup) may break down due to static electricity of clothes or human body. Use due caution to electrostatic break down when servicing and handling the laser diode.

5.1 Grounding for electrostatic breakdown prevention

5.1.1 Worktable grounding

5.1.2 Human body grounding

5.1.3 Handling of optical pickup

5.2 Handling Precautions for Traverse Unit (Optical Pickup)

5.1 Grounding for electrostatic breakdown prevention

Some devices such as the DVD player use the optical pickup (laser diode) and the optical pickup will be damaged by static electricity in the working environment. Proceed servicing works under the working environment where grounding works is completed.

5.1.1 Worktable grounding

5.1.2 Human body grounding

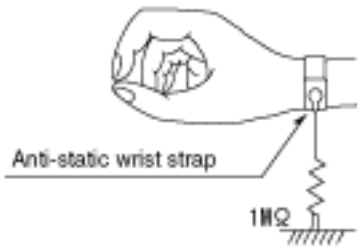
5.1.3 Handling of optical pickup

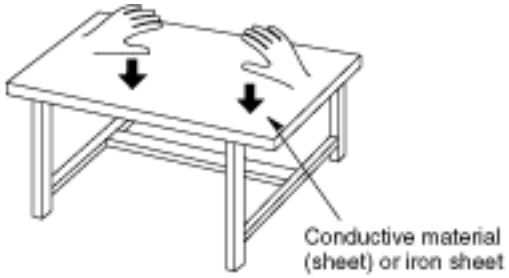
5.1.1 Worktable grounding

1. Put a conductive material (sheet) or iron sheet on the area where the optical pickup is placed, and ground the sheet.

5.1.2 Human body grounding

1. Use the anti-static wrist strap to discharge the static electricity form your body.





5.1.3 Handling of optical pickup

1. In order to keep the optical pickup in good quality, during transporting and before installing, both ends of the laser diode are to be shortcircuited. After replacing the part with a new one, remove the short circuit according to the correctprocedure. (Refer to this Service manual)

2. Failure to do so will damage the laser diode due to the external current surge from the power supply in the tester.

5.2 Handling Precautions for Traverse Unit (Optical Pickup)

1. Do not give a considerable shock to the traverse unit (optical pickup) as it has an extremely high-precise structure.

2. When replacing the optical pickup, install the flexible cable and cut its short land with a nipper. Refer to the optical pickup replacement procedure in this Service Manual. Before replacing the traverse unit, remove the short pin for preventingstatic electricity and install a new unit. Connect the connector as soon as possible.

3. The flexible cable may be cut off if an excessive force is applied to it. Use caution when handling the cable.

4. The half-fixed resistor for laser power adjustment shall not be adjusted. Do not turn the resistor.

6 GENERAL DESCRIPTION

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6.1 OPERATING INSTRUCTIONS

6.2 SERVICE CAUTION-1

6.2.1 REPLACING PROCEDURE [IC6001]

6.3 CAUTION FOR AC MAINS LEAD (NV-VP32GC)

6.4 HOW TO REPLACE THE LITHIUM BATTERY

6.4.1 GENERAL DESCRIPTION

6.4.2 REPLACEMENT PROCEDURE

6.5 SERVICE CAUTION-2

6.5.1 CAUTION FOR AUTO TUNING

6.5.2 REMOVAL OF CASSETTE TAPE

6.5.3 CYLINDER UNIT REPLACEMENT

6.5.4 ATTENTION FOR REPLACING THE CYLINDER UNIT

6.5.5 FLAT CARD CABLE INSTALLATION

6.6 SELF-DIAGNOSIS & SERVICE INFORMATION DISPLAY

6.7 INTRODUCTION OF VIDEO HEAD CLEANING CASSETTE (POLISHING TYPE)

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6.1 OPERATING INSTRUCTIONS

6.2 SERVICE CAUTION-1

When the Microprocessor IC6001 and/or Back-up battery B7751 are replaced, read the following procedure carefully and proceed it.

[REASONS]

There is a RAM in the IC6001, which is backing up:

1. Programme Navigation Data [See NOTE1]
2. TV Tuning Data
3. PG Shifter Adjustment Data
4. Option Setting Data

When IC6001 are replaced, all above listed data become not available.

These data is backed up by using the power source of:

*AC Connected: AC Power source

*AC Disconnected: Back-up Battery (B7751) & Back-up Capacitor (C7752)

[NOTE1]

As for your reference, without inserting a tape into a VCR, you can confirm that the NAVI data that is backed up by IC6001 as shown in the following steps.

1. Press the Menu button and select the option, then set the "NAVI" to ON mode.
2. Turn on the Service Mode and press the "NAVI" button on the Remote Controller in more than 5 seconds. The "NAVI" data list is displayed on the Monitor. (Press the "MENU" button on the Remote Controller for cancellation.)

Although stored NAVI data can be confirmed on the monitor, there is no way to transfer the NAVI data to IC6001 which is newly mounted.

6.2.1 REPLACING PROCEDURE [IC6001]

6.2.1 REPLACING PROCEDURE [IC6001]

[1.PREPARATION]

Before replacing IC6001:

1. Be noted that stored TV broadcast channels might be erased.

   (Because the user may have stored TV broadcast manually rather than using "Auto Tuning".)

NOTE:

During servicing, do not make a short circuit between IC6001-pin 37 (5V) with other line/Components otherwise IC6001 may be broken.

CAUTION:

*When replacing the B7751, be sure to read/follow the "HOW TO REPLACE THE LITHIUM BATTERY" section.

[2.REPLACING PROCEDURE IN STEPS]

STEP1.PREPARATION

1. Disconnect the AC plug before removing the C.B.A. with Mechanism unit by referring to the Disassembly procedure.

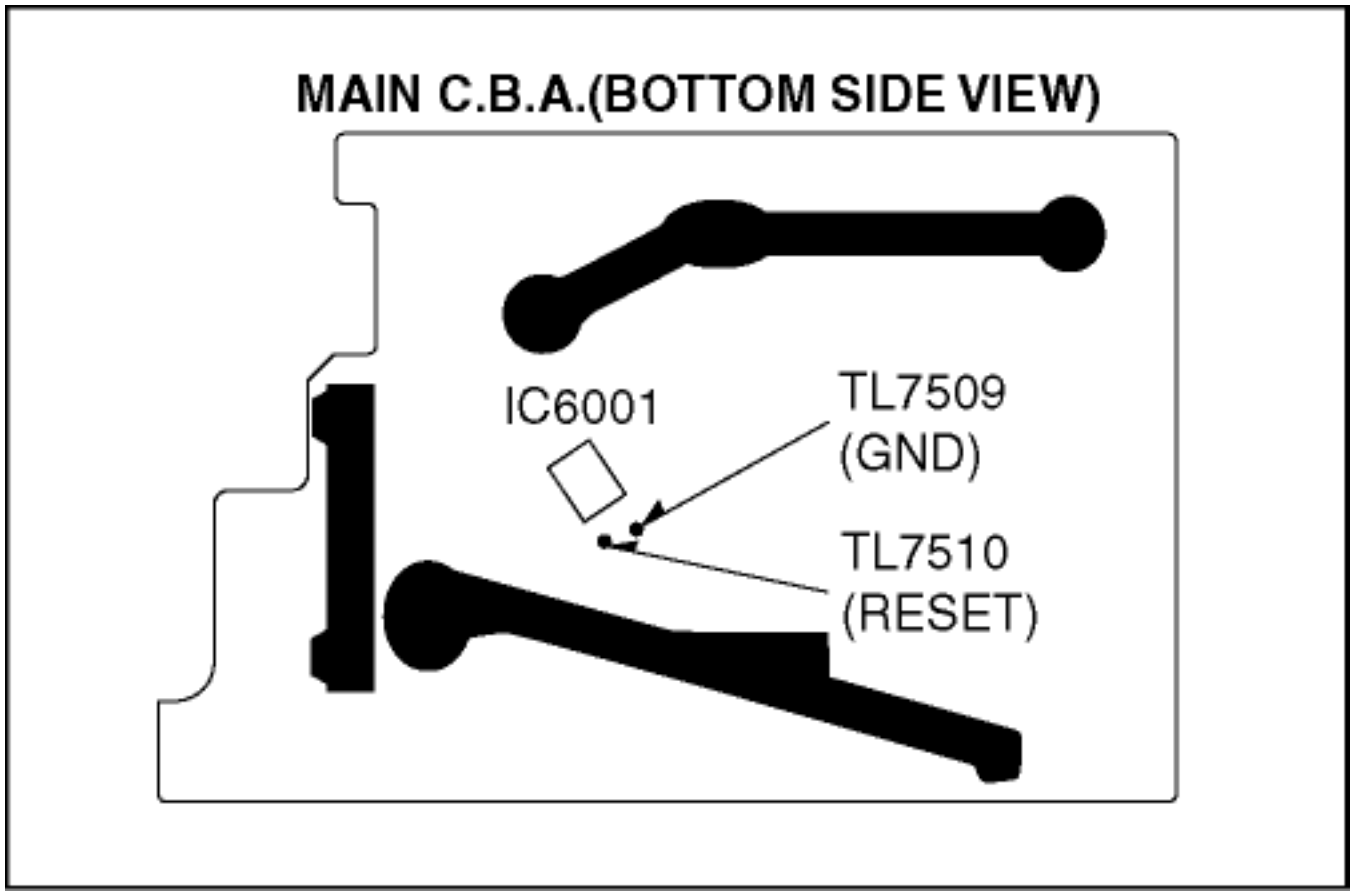
STEP2.REPLACE THE IC6001

1. Replace the IC6001. (Do not make a short circuit between IC6001-pin37 and other pins/Components.)

STEP3.RESET THE IC6001 AT ONCE

1. Connect the AC plug.

2. Connect a jumper wire between TL7510 (RESET) and TL7509 (GND) for a second to reset the Microprocessor IC6001.



Note:

Since the resistance at pin 2 of IC6001 decides the model distinction, there is no need to set up the Model code, which is necessary in the previous models.

STEP4.LINE-IN SETTING & ACTIVATE PLUG-IN A.T.P.

(FOR OTHER THAN NV-VP32GL)

1. Press the Channel up and down keys simultaneously for more than 3 seconds until the channel on the unit s display changes to 1, under the condition of the no tape is in the unit.

2. Confirm that "A1" and "A2" can be displayed on the FIP by pressing the CH UP and CH DOWN buttons.

3. Disconnect the AC plug for few seconds and connect it again, and press POWER button for turning the power to on from off to carry out the "Plug in Auto Tuner Preset".

4. Since other than the channels that can be stored by "Auto Tuning" operation are not available yet, preset manually by consulting the note of its available TV channels of which you took before.

STEP5.TAPE INTERCHANGEABILITY ADJUSTMENT

Refer to the Electrical Adjustment Procedures.

TOP PREVIOUS NEXT

6.3 CAUTION FOR AC MAINS LEAD (NV-VP32GC)

6.4 HOW TO REPLACE THE LITHIUM BATTERY

TOP PREVIOUS NEXT

6.4.1 GENERAL DESCRIPTION

6.4.2 REPLACEMENT PROCEDURE

TOP PREVIOUS NEXT

6.4.1 GENERAL DESCRIPTION

There is a RAM in the IC6001, which is backing up the following data by using the power source of B7751 (Back-up Battery) and C7752 (Back-up Capacitor: Back-up time is approximately 30 minutes).

1. Programme Navigation Data
2. TV Tuning Data
3. PG Shifter Adjustment Data
4. Option Setting Data

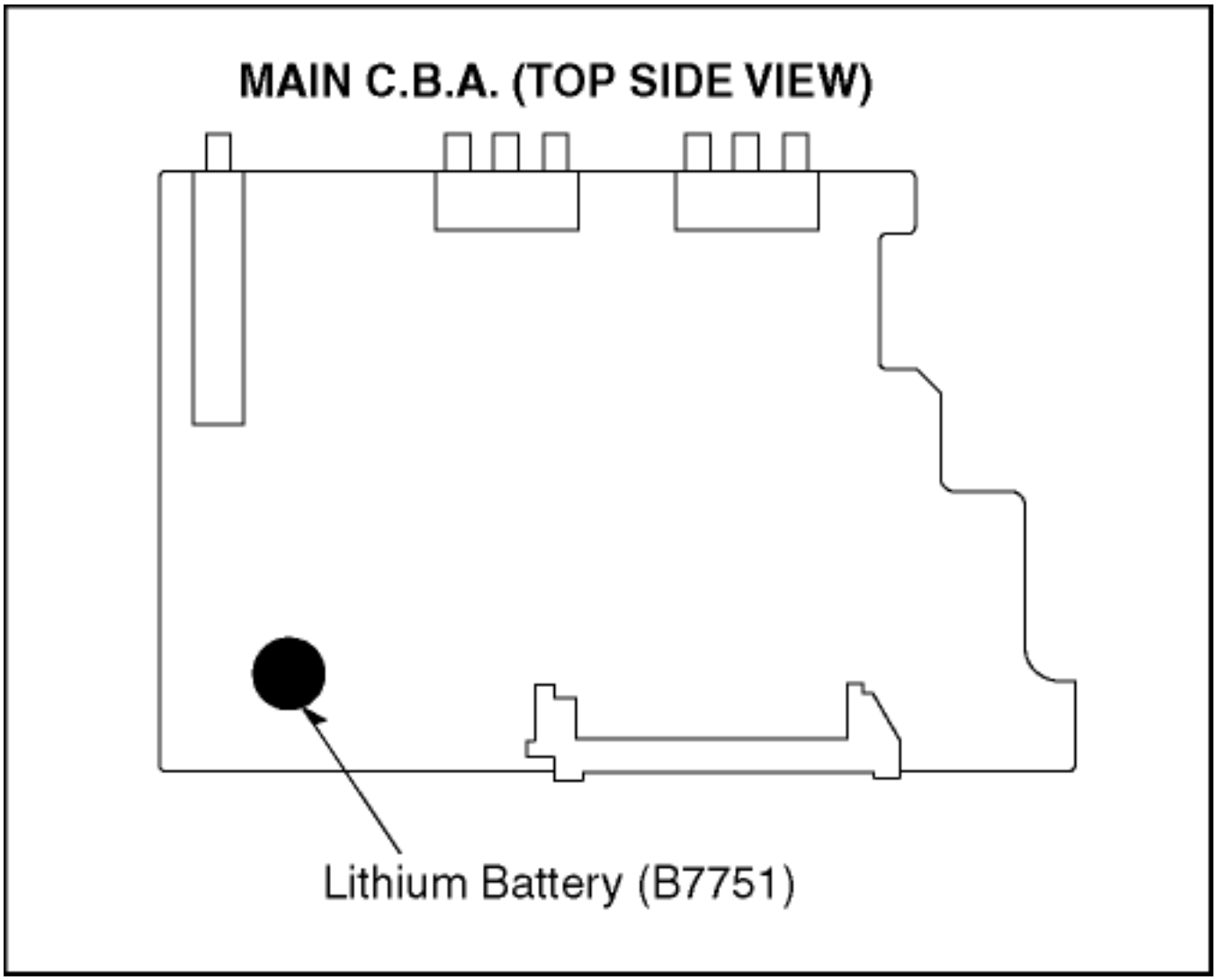
6.4.2 REPLACEMENT PROCEDURE

NOTE:

This work should be finished within 30 minutes so that the RAM data would not be lost as running out of current from the Back-up Capacitor C7752.

1. Remove the Top Panel and Mechanism unit with Main C.B.A by referring to the Disassembling Procedure.

2. Unsolder the Lithium Battery: B7751 and then replace it with a new one (See Fig. B1).



NOTE:

The lithium battery is a critical component.

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

PRECAUTION
Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

VORSICHT
Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom Hersteller empfohlenen Batterie vom gleichen Typ ersetzen.
Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern.

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning má kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

TOP PREVIOUS NEXT

6.5 SERVICE CAUTION-2

TOP PREVIOUS NEXT

6.5.1 CAUTION FOR AUTO TUNING

6.5.2 REMOVAL OF CASSETTE TAPE

6.5.3 CYLINDER UNIT REPLACEMENT

6.5.4 ATTENTION FOR REPLACING THE CYLINDER UNIT

6.5.5 FLAT CARD CABLE INSTALLATION

TOP PREVIOUS NEXT

6.5.1 CAUTION FOR AUTO TUNING

PROCEDURE

Auto Tuning will start by the following procedure.

1. Connect the DIN-RF Cable.

2. Connect the AC Mains Lead.

3. Turn on the VCR.

   Auto Tuning will start.

   Auto Tuning search for TV stations from VHS minimum to UHF maximum and memorizes every tuned program position. Other program positions are skipped.

   Auto Tuning takes five or more minutes to complete its search.

   Do not touch the VCR during Auto Tuning.

   Auto Tuning will stop halfway, if the VCR is operated or the aerial lead and/or the mains lead are disconnected.

   In case the VCR stopped during Auto Tuning, the VCR has to be reset and restarted. See the following item 2.

NOTE:

1. If the VCR is turned on with the antenna not connected, all channels are skipped. Therefore, firmly connect the antenna and then turn the VCR off and on again to execute Auto tuning.

2. When Auto Tuning is canceled halfway, Auto Tuning is not execute even if the VCR is turned off and then turned on again,

   In this case, Auto Tuning has to be restarted by the following procedures.

   A. Press EJECT and remove the Videocassette.

   B. Keep UP and DOWN on the VCR pressed simultaneously for 3 seconds or more during

the VCR on.

The channel displayed on the VCR display disappears for moment then changes to 1.

C. Disconnect the AC mains lead and the reconnect it.

D. Turn on the unit. Auto Tuning commences.

3. If you turn the VCR off during Auto Tuning, Auto Tuning will stop halfway.

   The VCR should be reset and restarted by the item 2 in order to execute Auto Tuning.

4. If the VCR starts playback during Auto Tuning, Auto Tuning will stop halfway.

   The VCR should be reset and restarted by the item 2 in order to execute Auto Tuning.

5. To cancel Auto Tuning Mid-operation, press POWER During Auto Tuning (The VCR is turned off).

6. When the VCR is moved to the other area or country, TV broadcasts should be stored again.

6.5.2 REMOVAL OF CASSETTE TAPE

When the cassette tape could not be uninstalled from an electrical malfunction, There are 2 ways to remove a cassette tape.

1. Removal by compulsory unloading.

    A. Press FF and EJECT button simultaneously for more than 3 seconds and set the Service Mode to 7.

    B. Press STOP button in order to unload the mechanism. (Pay attention to tape slack)

    Service Mode Indication:

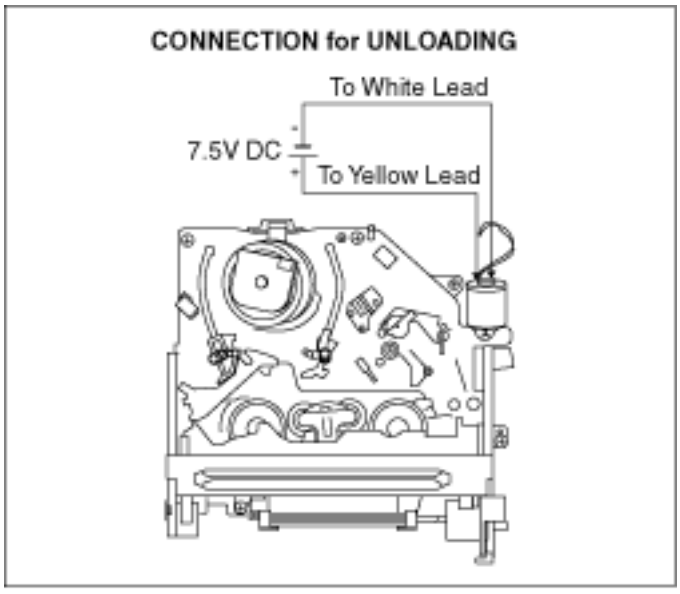
    7 ** ** (STOP) → 7 0L ** (EJECT)

2. Removal by manual operation by rotating the Loading Motor with the batteries.

    A. Disconnect the AC plug, and remove the Top Panel and the Front Panel by referring to the Disassembly Procedures.

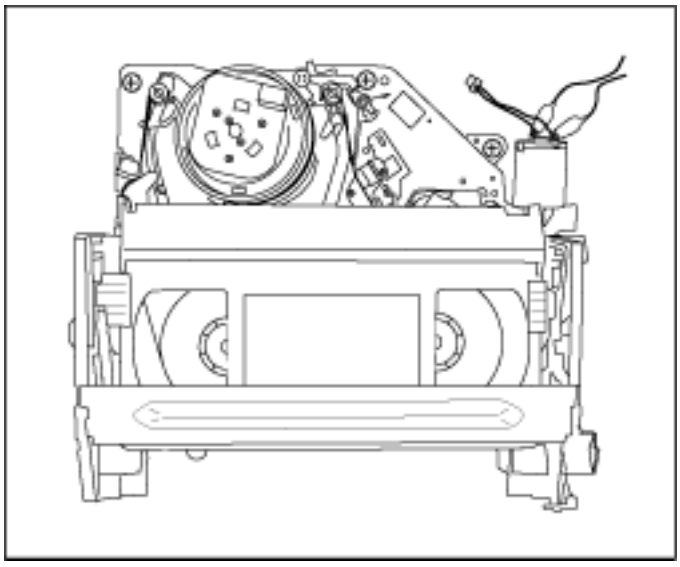
    B. Connect five batteries (1.5V spec.) to the Loading Motor in series for supplying 7.5V to rotate the Loading Motor as shown in Fig. S1 .

Fig. S1



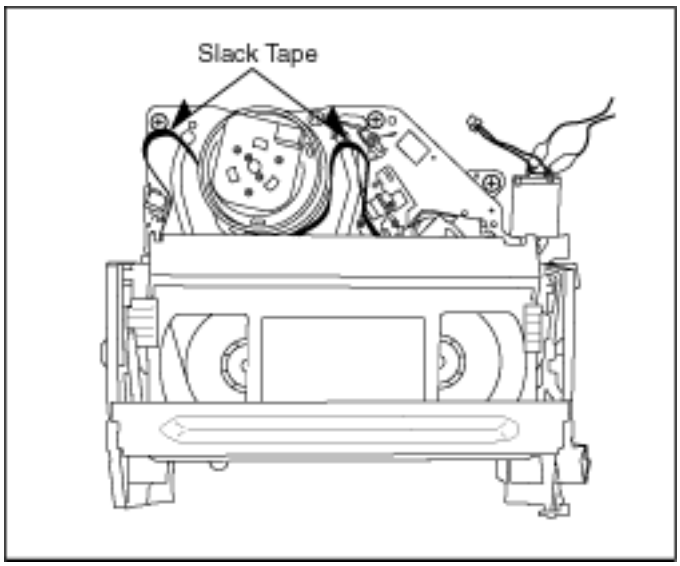
3. Stop unloading just before unloading would be completed as shown in Fig. S2 .

Fig. S2



4. Then the tape becomes slack as shown in Fig. S3 .

Fig. S3



5. Rotate the S-Reel by a small minus screwdriver (Fig. S4) to remove the slack tape as shown in Fig. S5 .

Fig. S4

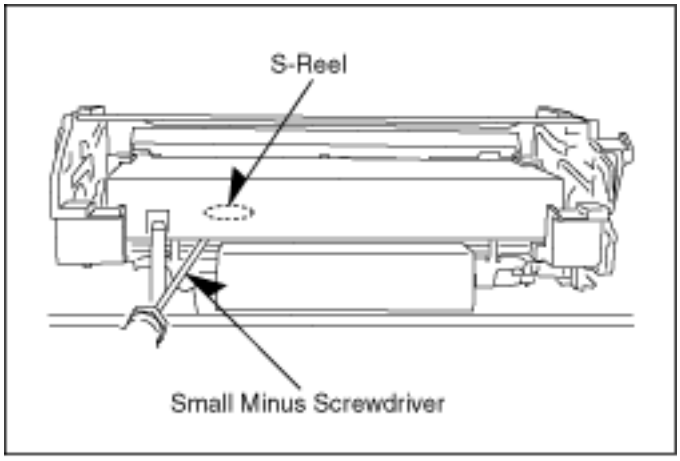
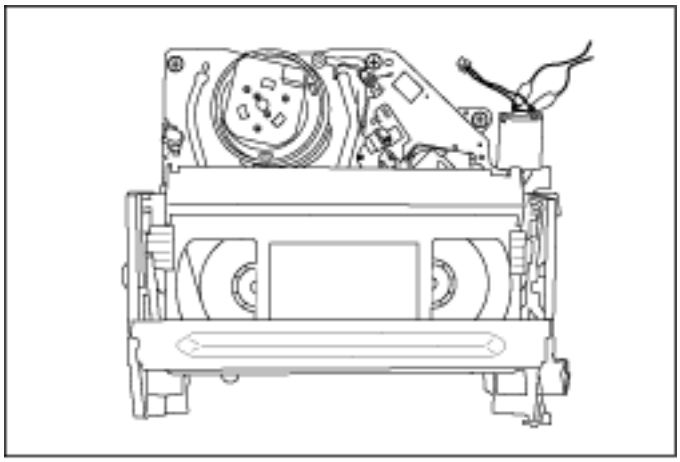
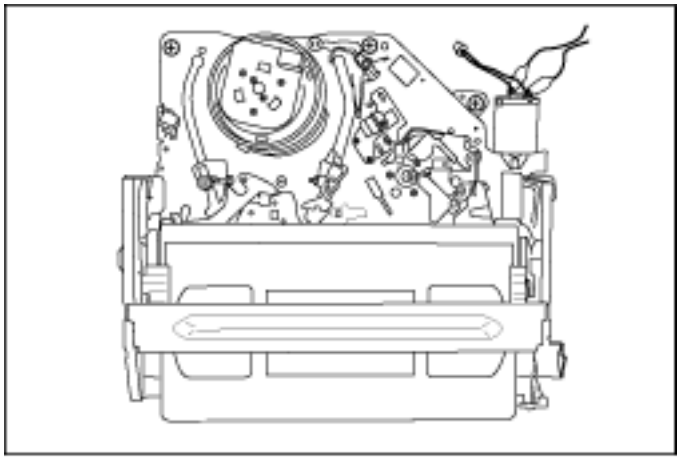


Fig. S5



6. Then unload again to remove the cassette tape as shown in Fig. S6 .

Fig. S6

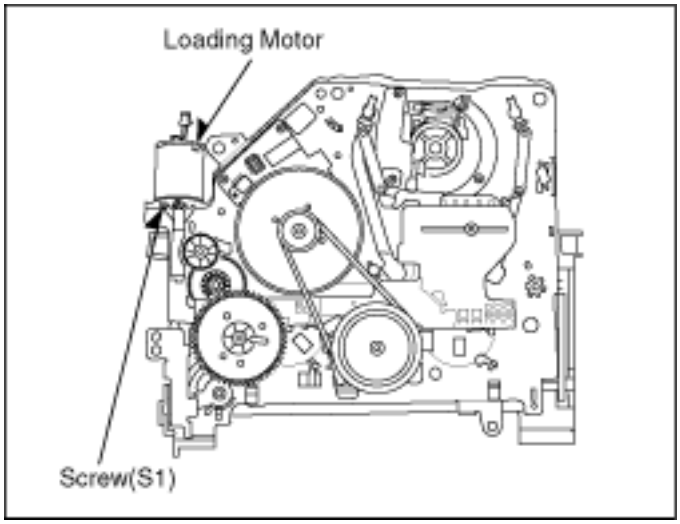


- Removal by manual operations after uninstalling the mechanism,refer to the DISASSEMBLY METHOD of item 3.1.

A. Disconnect the AC plug, and remove the Top Panel, Front Panel and the Mechanism by referring to the Disassembly Procedures.

B. Remove the Screw (S1) and remove the Loading Motor both as shown in Fig. S7 .

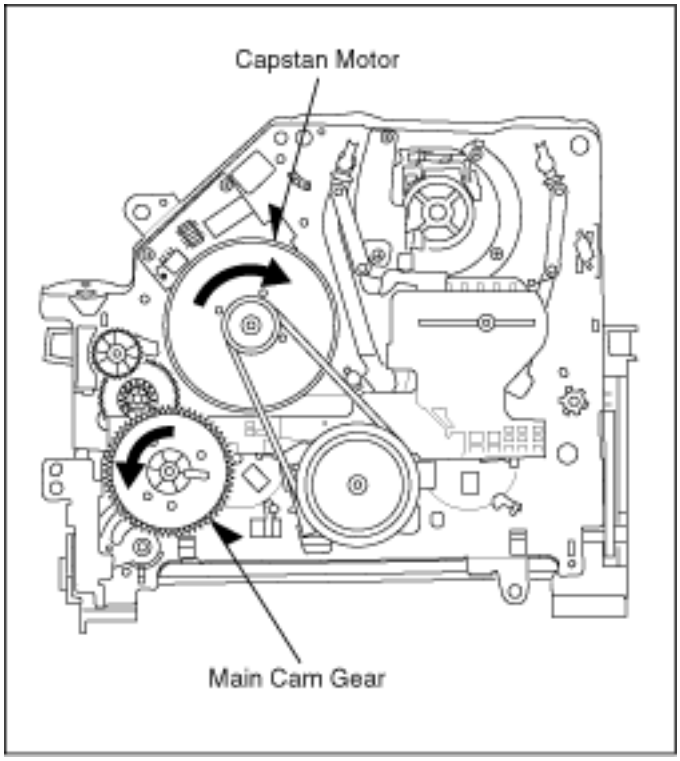
Fig. S7



- Rotate the Main Cam Gear counter-clockwise (Fig. S8) until just before the unloading would be completed as shown in Fig. S2 .

- Rotate the Capstan Motor clockwise (Fig. S8) to remove the slack tape as shown in Fig. S5 .

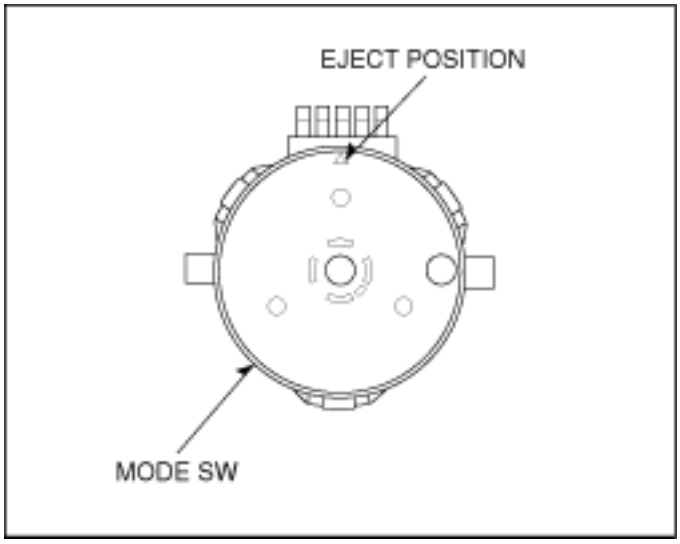
Fig. S8



- Rotate the Main Cam Gear counter-clockwise again (Fig. S8) to remove the cassette-tape as shown in Fig. S6 .

- Set the Position Switch to EJECT POSITION certainly as shown in Fig. S9 .

Fig. S9



- Install the Loading Motor and tighten screw (S1) as shown in Fig. S7 .

TOP PREVIOUS NEXT

6.5.3 CYLINDER UNIT REPLACEMENT

NOTE:

Since securing of RT gap is impossible to be done outside the factory, do not replace only replace the Upper Cylinder unit of R4 Mechanism, please replace the whole Cylinder Unit with a new one. Perform the Compatibility adjustment after replacingthe DD Cylinder Unit.

1. Remove the Mechanism Unit from Main C.B.A./Chassis by referring to "Disassembly Procedure".

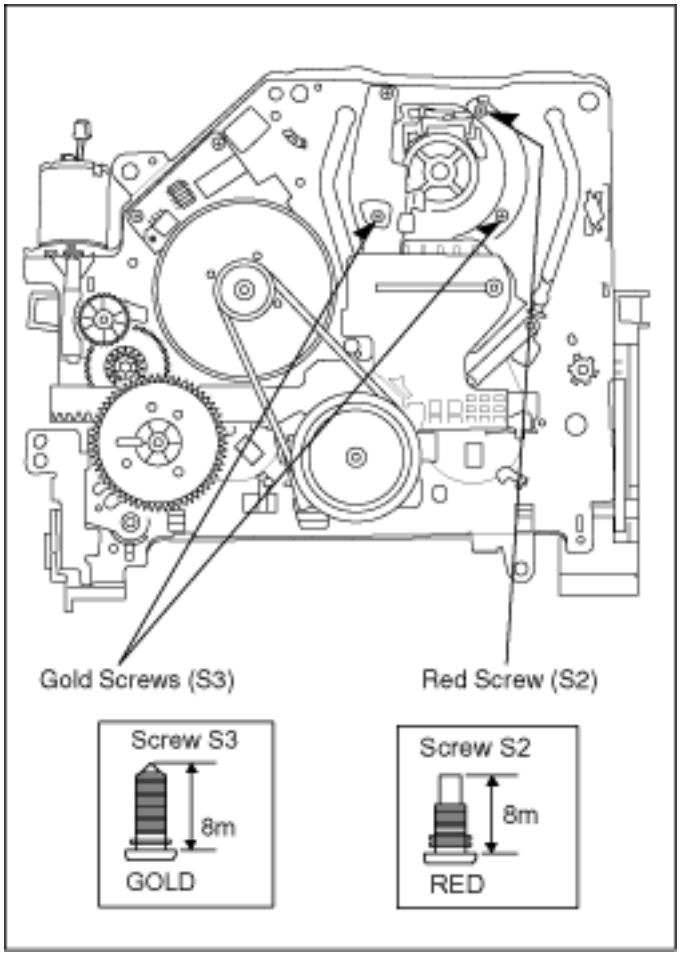
2. Unlock 2 locking tabs on a side to release the Cylinder Flexible Card as shown in Fig. S10 .

   CAUTION:

   Handle the Cylinder Flexible Card with care. When it damaged, you should replace it with a new Cylinder Unit.

3. Remove a red Screw (S2) and 2 gold Screws (S3) to remove the Cylinder Unit shown in Fig. S10 .

Fig. S10



NOTE:

When reassembling, perform the steps in the reverse order, and perform the TAPE INTERCHANGEABILITY ADJUSTMENT certainly after CYLINDER UNIT REPLACEMENT.

TOP PREVIOUS NEXT

6.5.4 ATTENTION FOR REPLACING THE CYLINDER UNIT

CAUTION:

Handle the Cylinder Flexble Card with care. When it damaged, you should replace it with a new Cylinder Unit.

1. Put the gloves on your hands.

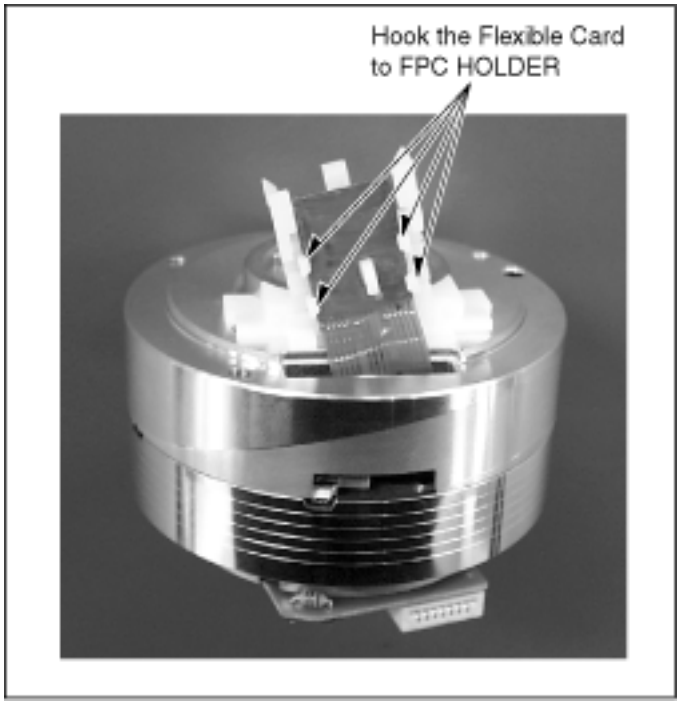
2. Turn the Cylinder Unit over.

3. Insert the FPC HOLDER to the Cylinder Unit.

Fig. S11

4. Hook the Flexible Card to the FPC HOLDER.

Fig. S12



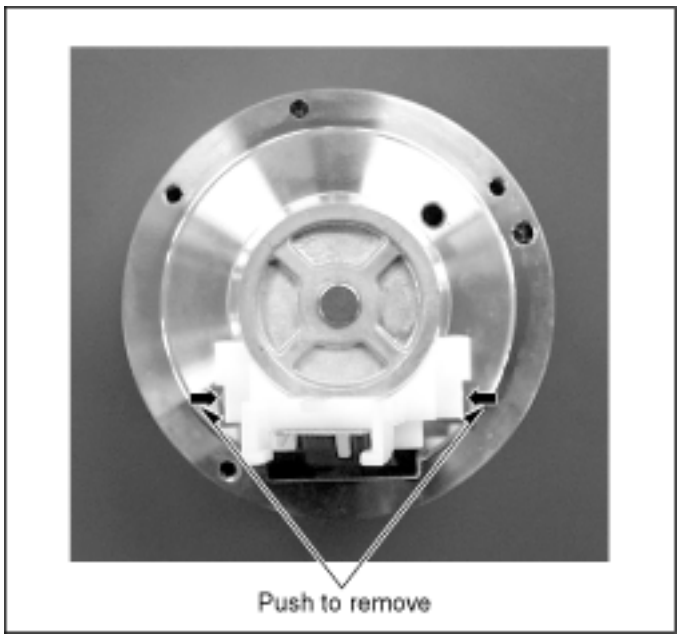
NOTE:

1. When removing the FPC HOLDER, push stopper portion of the FPC HOLDER with a small minus screw driver and so on. And then pay attention for not to scratch the Cylinder and not to break the Head Chip.

2. FPC HOLDER is not reuseable.

   If removed, install a new one.

Fig. S13

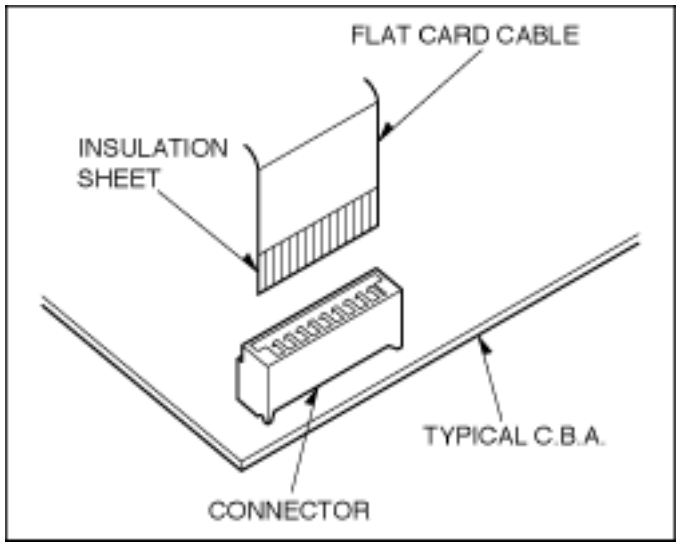


6.5.5 FLAT CARD CABLE INSTALLATION

TOP PREVIOUS NEXT

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

Fig. S14



TOP PREVIOUS NEXT

6.6 SELF-DIAGNOSIS& SERVICE INFORMATION DISPLAY

Refer to the Service Manual for R4 Mechanism Chassis.

(Order No.: VRD0202010C8).

6.7 INTRODUCTION OF VIDEO HEAD CLEANING CASSETTE (POLISHING TYPE)

1. We are pleased to introduce Panasonic Video Head Cleaning Cassette, VFK0923FT [for service purposes] and VFK0923FSE [for end users] for all VHS/S-VHS VCP and VCR.

2. These cleaning cassettes are exclusively to remove hard and sticky clogging on video heads.

3. These improve the efficiency of video head cleaning service and shortening cleaning time for end users.

VFK0923FT (For Service usage)	
Type of Cassette	Full VHS Cassette
Cleaning Time	10 Seconds/Time
Tape Length	20 m
Usability in a Path	180 Times

VFK0823FSE (For end users)	
Type of Cassette	Full VHS Cassette
Cleaning Time	10 Seconds/Time
Tape Length	3.34 m
Usability in a Path	30 Times

Note:

The tape material itself is the same in both types.

TOP PREVIOUS NEXT

7 DISASSEMBLING THE CASING PARTS AND CIRCUIT BOARDS

TOP PREVIOUS NEXT

7.1 DISASSEMBLY FLOW CHART

7.2 CIRCUIT BOARD LAYOUT

7.3 DETAIL OF THE DISASSEMBLY

7.4 SERVICE POSITION

7.4.1 SERVICE POSITION OF MAIN C.B.A.

7.4.2 SERVICE POSITION OF POWER C.B.A.

7.4.3 SERVICE POSITION OF DVD MODULE C.B.A. & DVD MECHANISM

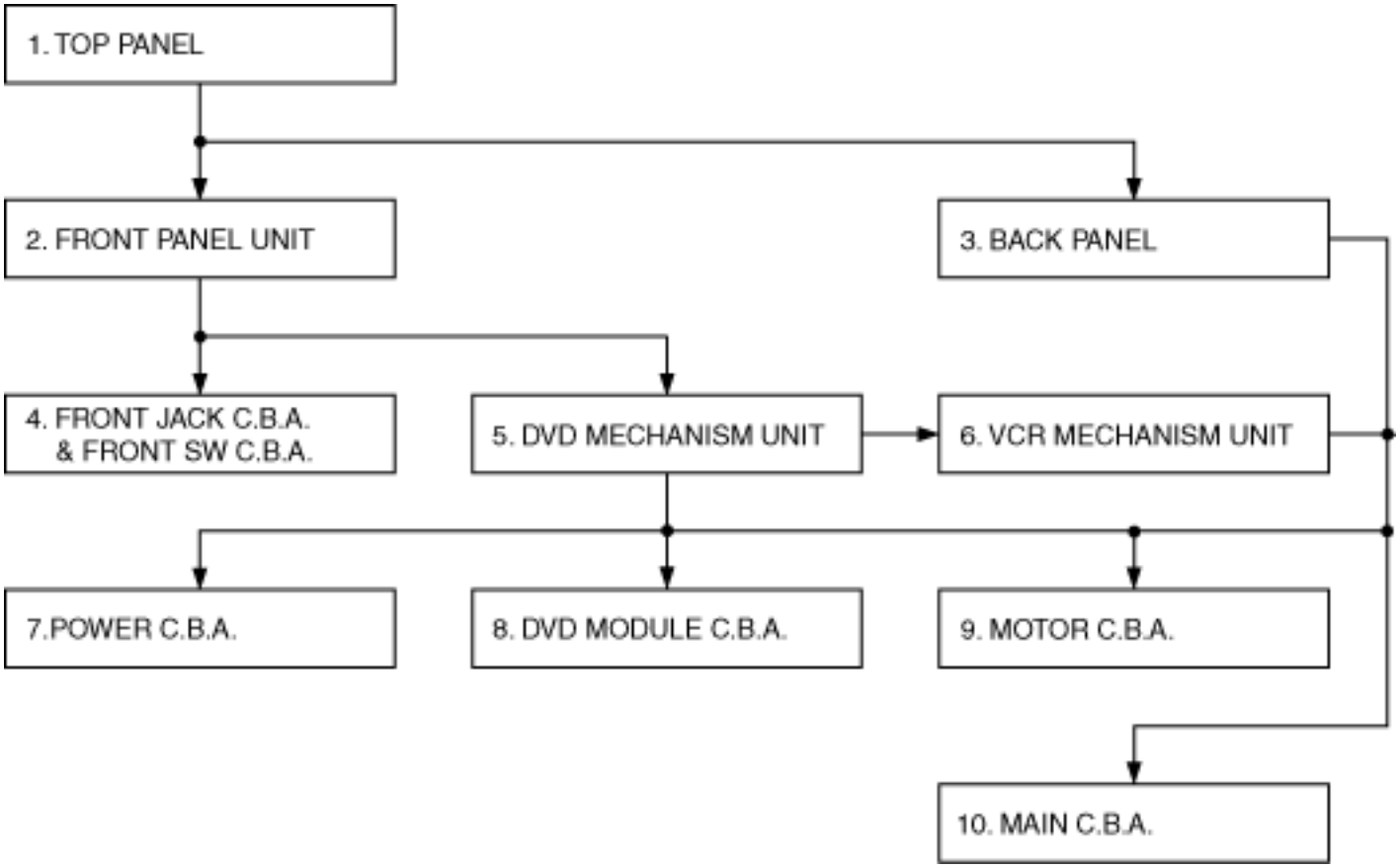
7.4.4 EXTENSION CABLE LIST

TOP PREVIOUS NEXT

7.1 DISASSEMBLY FLOW CHART

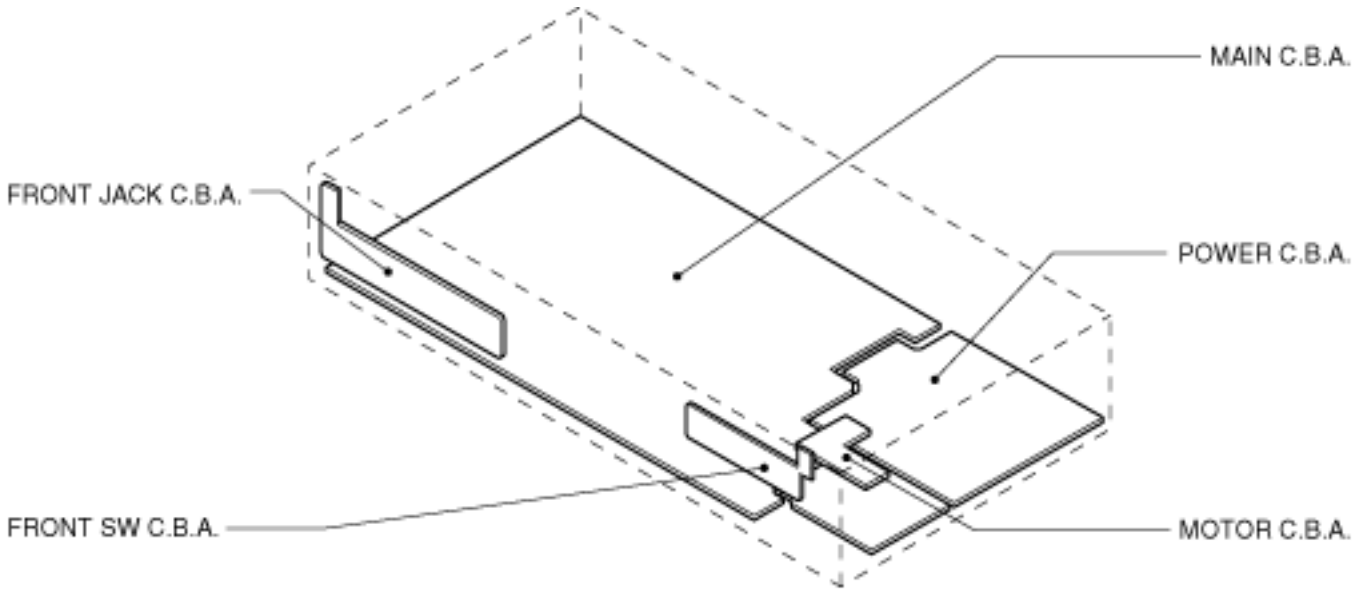
This flow chart indicates disassembly steps of the casing parts and the circuit boards in order to find the necessary items for servicing.

When reassembling, perform the steps in the reverse order.



7.2 CIRCUIT BOARD LAYOUT

TOP PREVIOUS NEXT



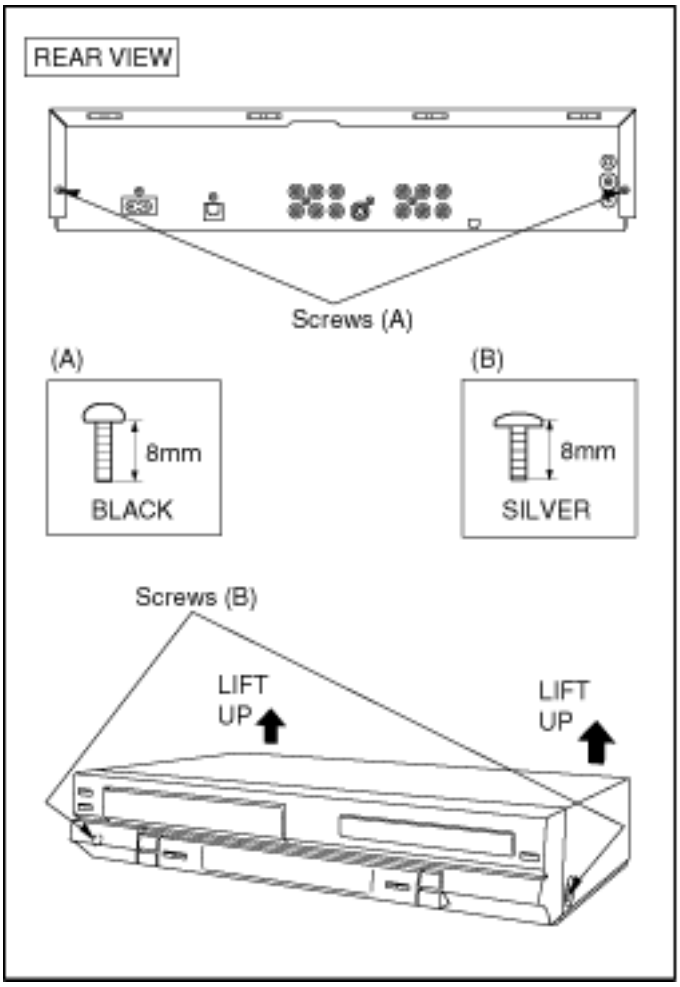
TOP PREVIOUS NEXT

7.3 DETAIL OF THE DISASSEMBLY

1. REMOVAL OF THE PANEL

Remove	2 Screws (A)
Remove	2 Screws (B)

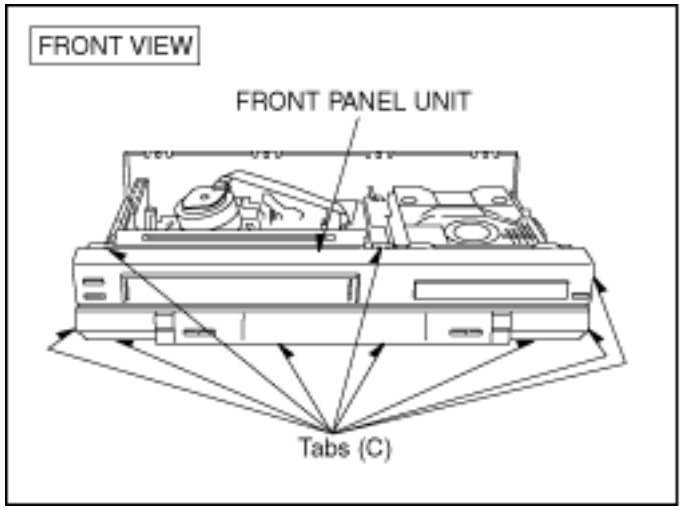
Fig. D1



2. REMOVAL OF THE FRONT PANEL UNIT

Unlock	9 Tabs (C)

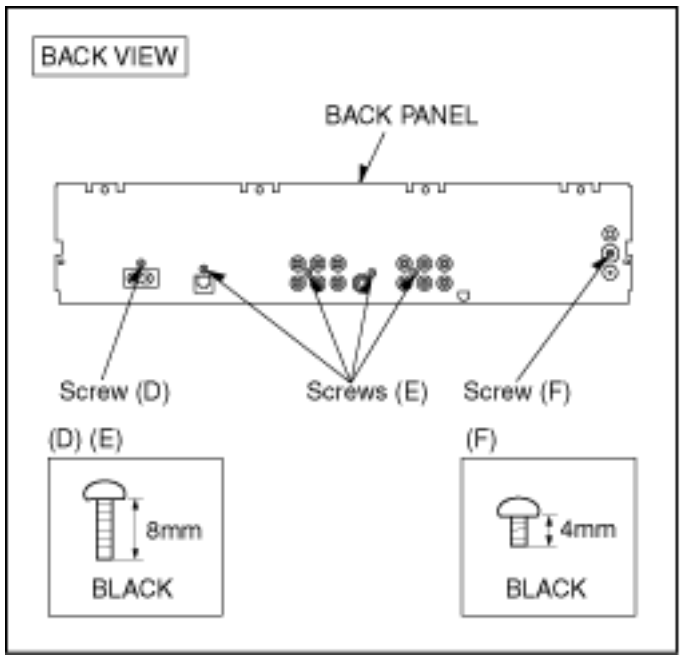
Fig. D2



3. REMOVAL OF THE BACK PANEL

Remove	Screw (D)
Remove	4 Screws (E)
Remove	Screw (F)

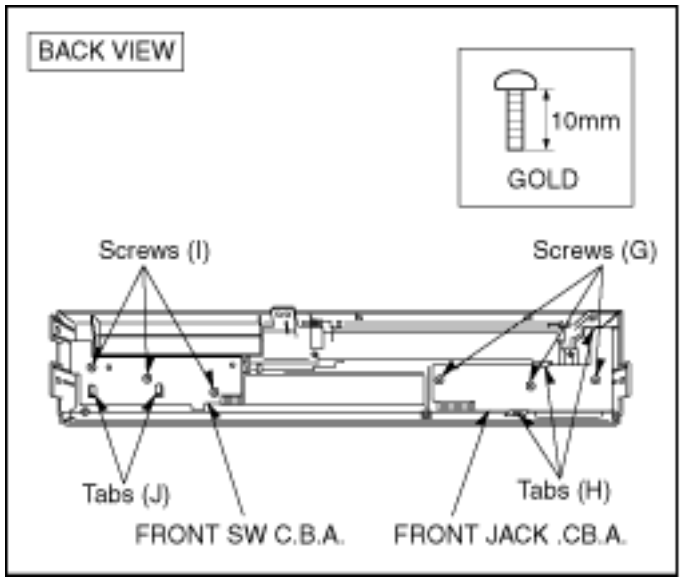
Fig. D3



4. REMOVAL OF THE FRONT JACK C.B.A. AND FRONT SW C.B.A.

REMOVAL OF THE FRONT JACK C.B.A.	
Remove	3 Screws (G)
Unlock	3 Tabs (H)
REMOVAL OF THE FRONT SW C.B.A.	
Remove	3 Screws (I)
Unlock	2 Tabs (J)

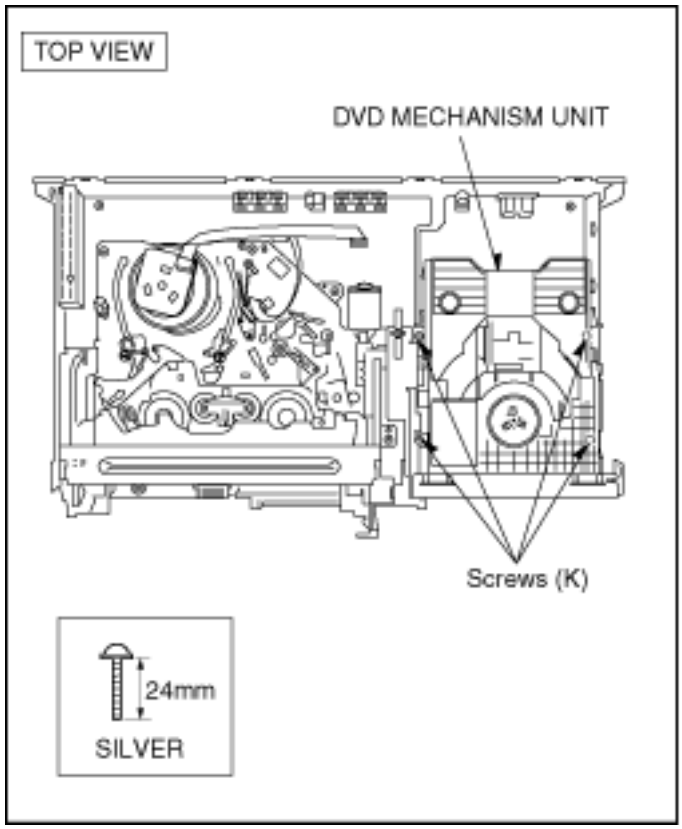
Fig. D4



5. REMOVAL OF THE DVD MECHANISM UNIT

Remove	4 Screws (K)

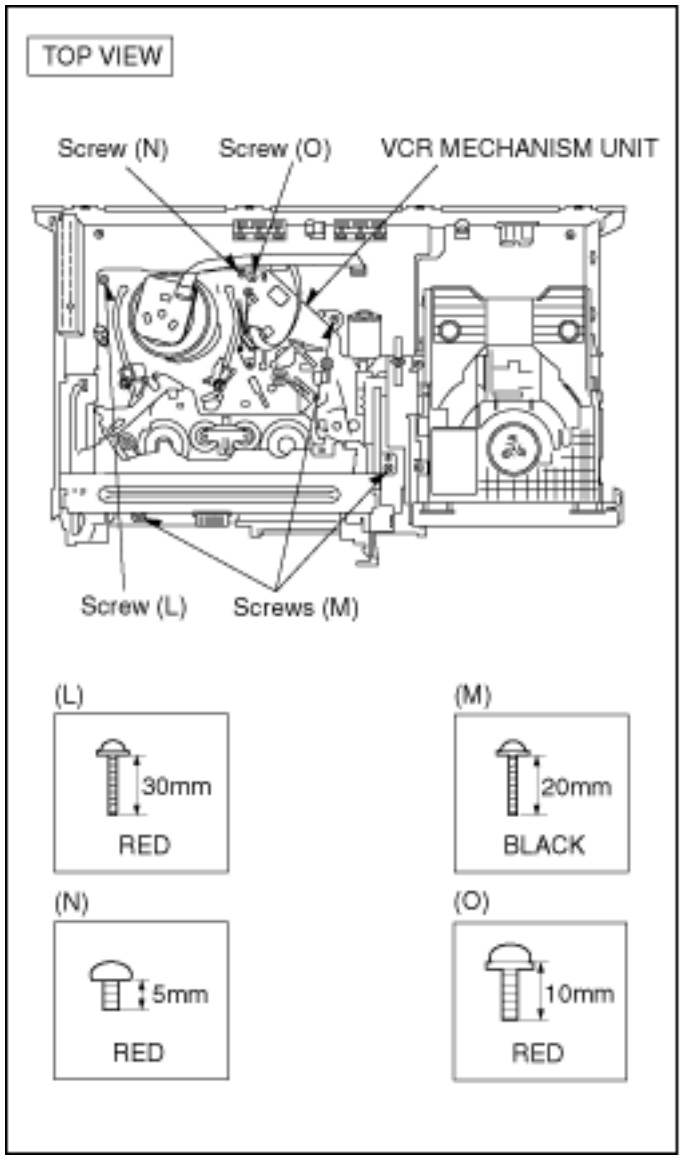
Fig. D5



6. REMOVAL OF THE VCR MECHANISM UNIT

Remove	Screw (L)
Remove	3 Screws (M)
Remove	Screw (N)
Remove	Screw (O)

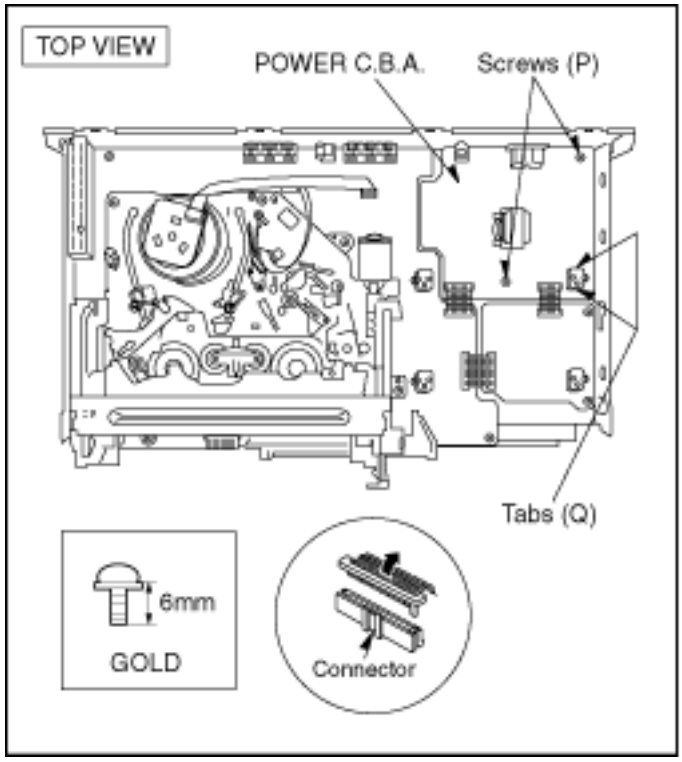
Fig. D6



7. REMOVAL OF THE POWER C.B.A.

Remove	Screw (D) [Fig. D3]
Remove	2 Screws (P)
Unlock	2 Tabs (Q)

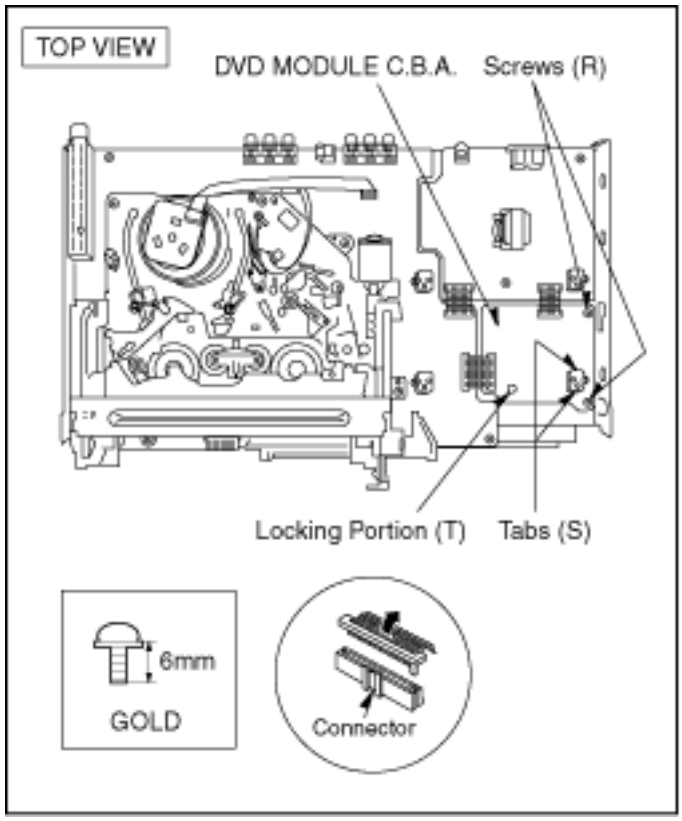
Fig. D7



8. REMOVAL OF THE DVD MODULE C.B.A.

Remove	2 Screws (R)
Unlock	2 Tabs (S)
Unlock	Locking Portion (T)

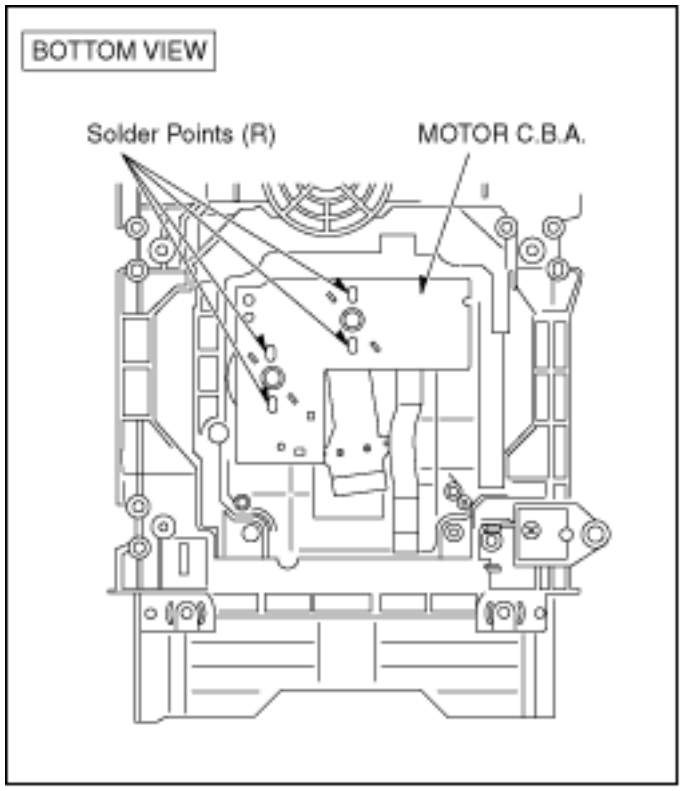
Fig. D8



9. REMOVAL OF THE MOTOR C.B.A.

Unsolder	4 Solder Points (U)

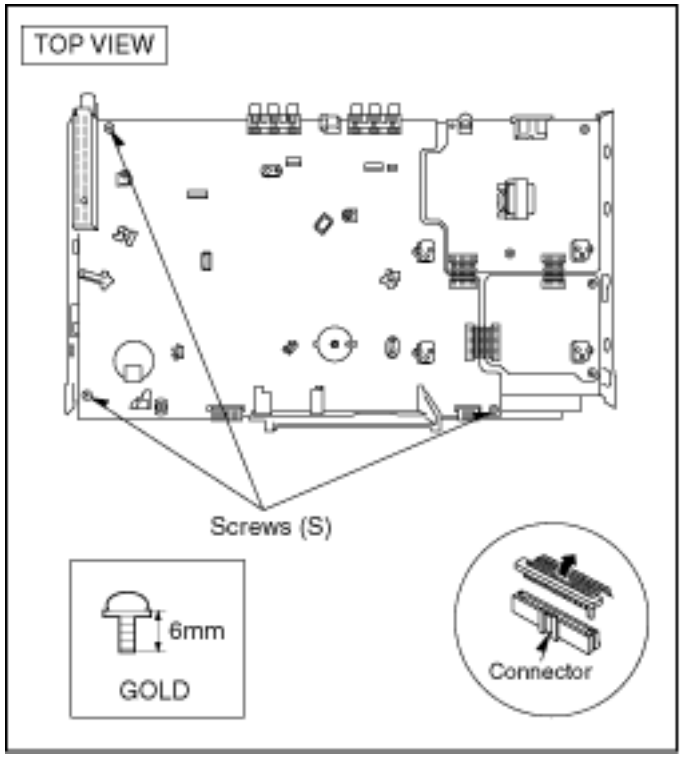
Fig. D9



10. REMOVAL OF THE MAIN C.B.A.

Remove	3 Screws (V)

Fig. D10



TOP PREVIOUS NEXT

7.4 SERVICE POSITION

TOP PREVIOUS NEXT

7.4.1 SERVICE POSITION OF MAIN C.B.A.

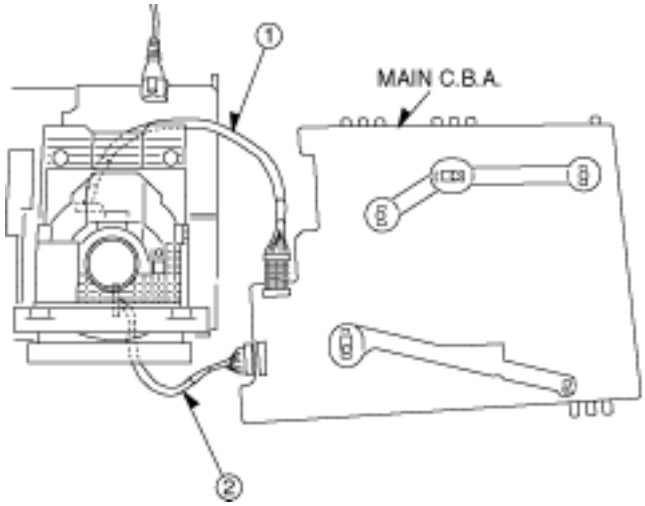
7.4.2 SERVICE POSITION OF POWER C.B.A.

7.4.3 SERVICE POSITION OF DVD MODULE C.B.A. & DVD MECHANISM

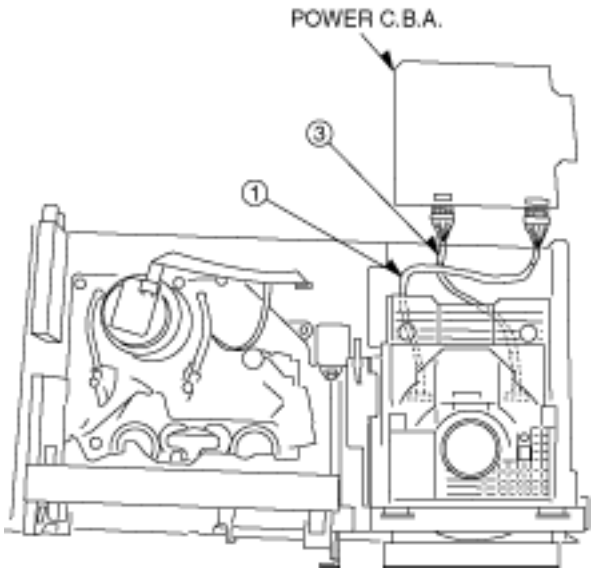
7.4.4 EXTENSION CABLE LIST

TOP PREVIOUS NEXT

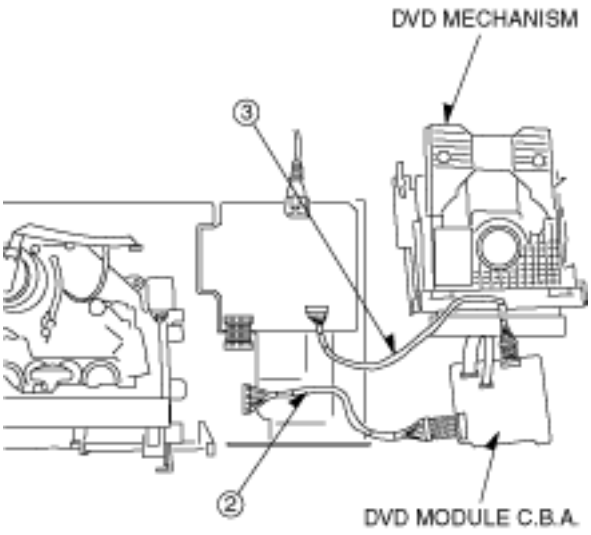
7.4.1 SERVICE POSITION OF MAIN C.B.A.



7.4.2 SERVICE POSITION OF POWER C.B.A.



7.4.3 SERVICE POSITION OF DVD MODULE C.B.A.& DVD MECHANISM



7.4.4 EXTENSION CABLE LIST

TOP PREVIOUS NEXT

	Connection		Pin	Extension Cable	Type	New
•@	POWER-MAIN	P1103-P31001	15	RFKZ0171	Wire Cable	•~
•A	DVD MODULE-MAIN	P8003-P34301	19	RFKZ0170	Wire Cable	•~
•B	DVD MODULE-POWER	P8002-P1102	11	VFK1730	Wire Cable	•~

TOP PREVIOUS NEXT

8 ASSEMBLING AND DISASSEMBLING THE MECHANISM UNIT

TOP PREVIOUS NEXT

8.1 Disassembly Procedure

8.2 Motor C.B.A.

8.3 Clamp Plate Unit

8.4 Tray

8.5 Traverse Block

8.6 Traverse Gear

8.7 Optical Pickup Unit

8.7.1 Precautions in optical pickup replacement

8.7.2 Disassembling the Optical Pickup Unit

8.7.3 Cautions to Be Taken When Replacing the Optical Pickup

8.8 Disassembling the Middle Chassis

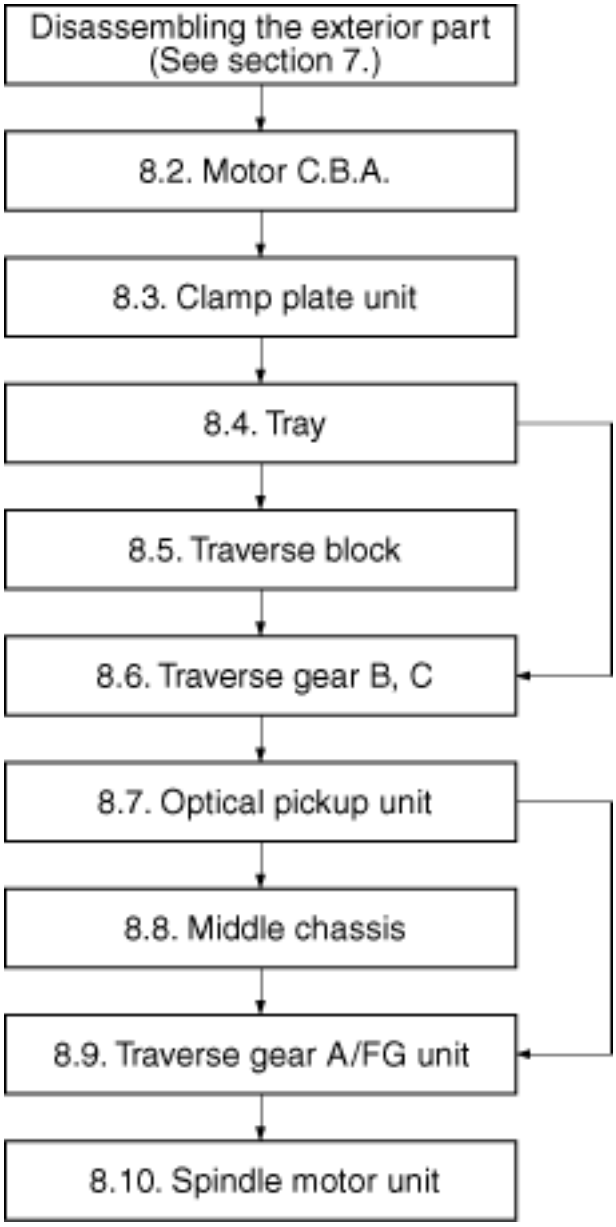
8.9 Disassembling the Traverse Gear A

8.10 Disassembling the Spindle Motor Unit

8.11 VCR Mechanism Adjustment Procedures

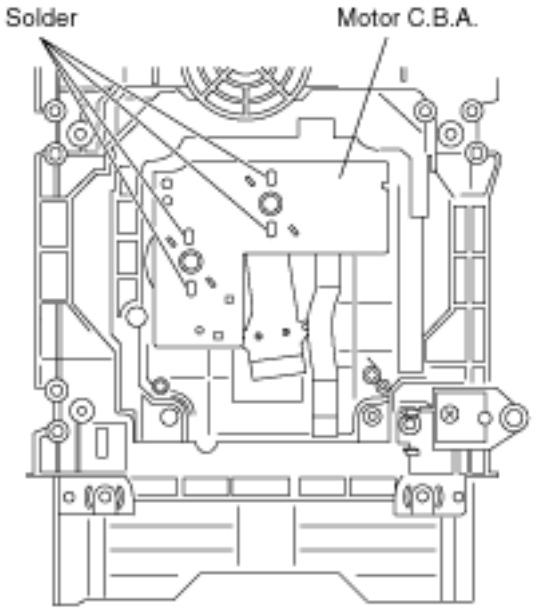
TOP PREVIOUS NEXT

8.1 Disassembly Procedure


Disassembling the exterior part (See section 7.)
8.2. Motor C.B.A.
8.3. Clamp plate unit
8.4. Tray
8.5. Traverse block
8.6. Traverse gear B, C
8.7. Optical pickup unit
8.8. Middle chassis
8.9. Traverse gear A/FG unit
8.10. Spindle motor unit

8.2 Motor C.B.A.

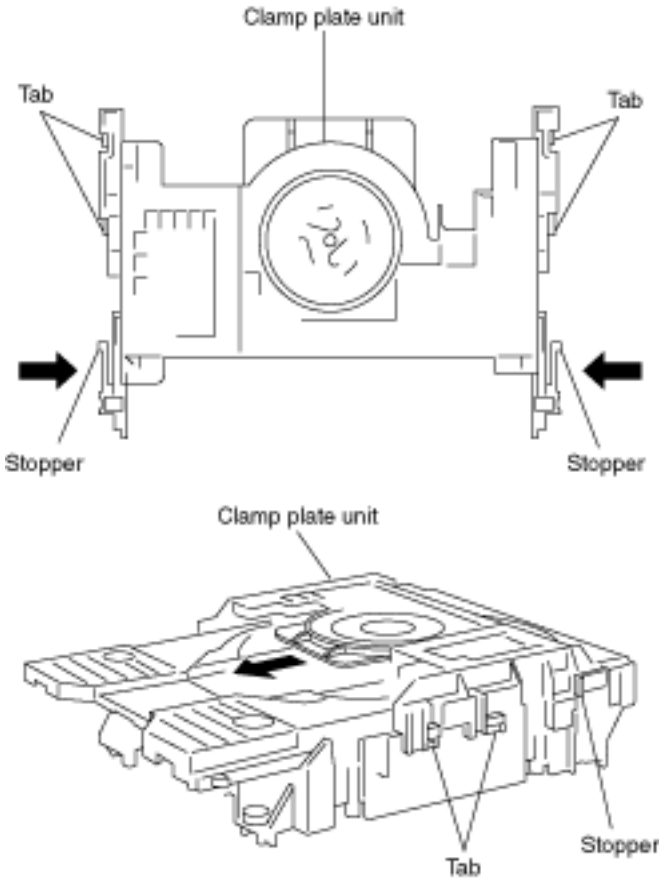
1. Remove the solders.



< Mechanism unit bottom >

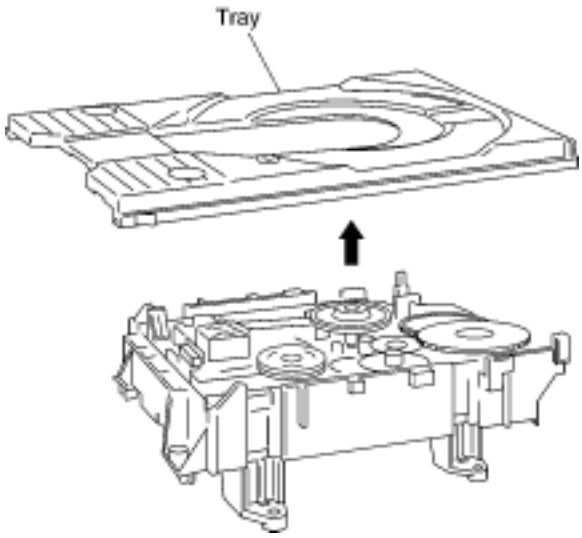
8.3 Clamp Plate Unit

1. Spread the stopper by hand to slide the tabs and remove the clamp plate unit.



8.4 Tray

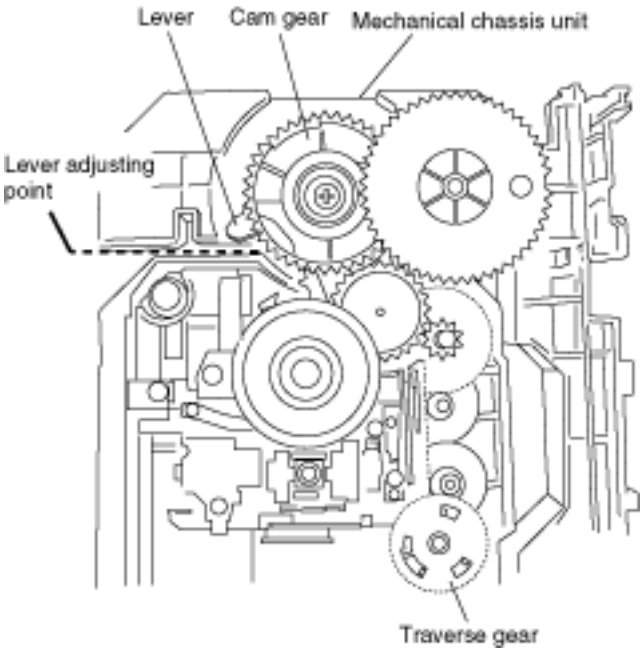
1. Lift the tray.



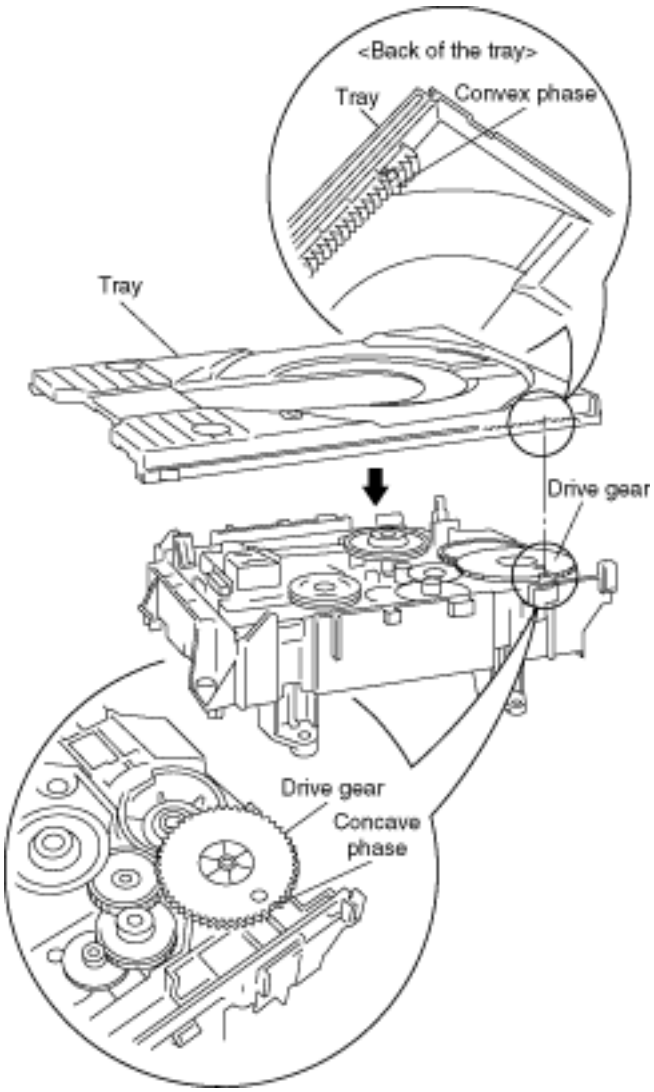
<Precautions in reassembling the tray>

•Reassemble the tray so that it is in the backmost position.

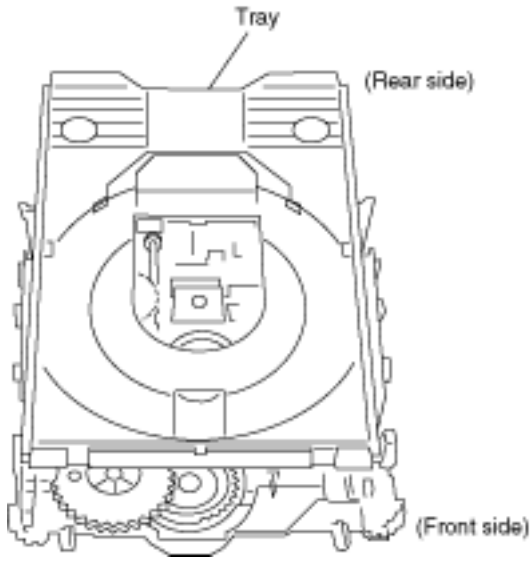
1. Turn traverse gear until cam gear leaver comes to the lever adjusting position at the end of mechanical chassis unit.



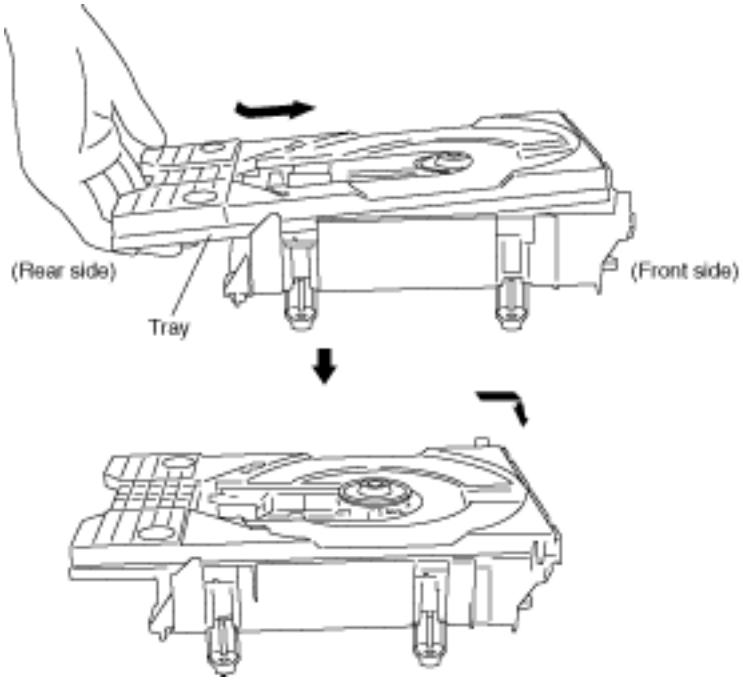
2. Check the position of convex phase on back of the tray, and that of concave phase on drive gear.



A. Place the tray on the unit from rearward.

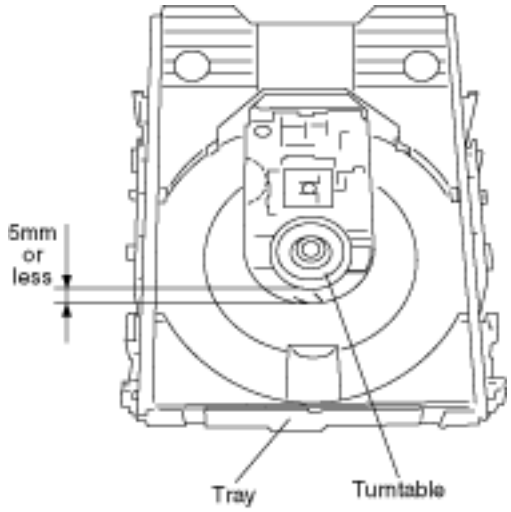


B. Inch the tray frontward until convex phase and concave phase mate.



Caution:

Make sure to match convex phase and concave phase properly, so that the gap between turntable and tray becomes 5mm or less.

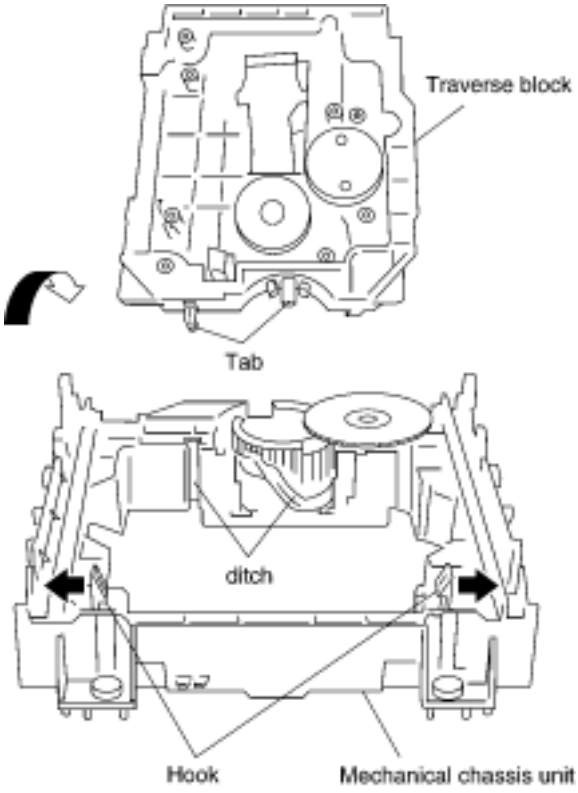


TOP PREVIOUS NEXT

8.5 Traverse Block

1. Lift the traverse block while spreading the hook of the mechanical chassis unit.

2. Disengage the tabs from the holes of the mechanical chassis unit.



8.6 Traverse Gear

<Precautions in reassembling the traverse block>

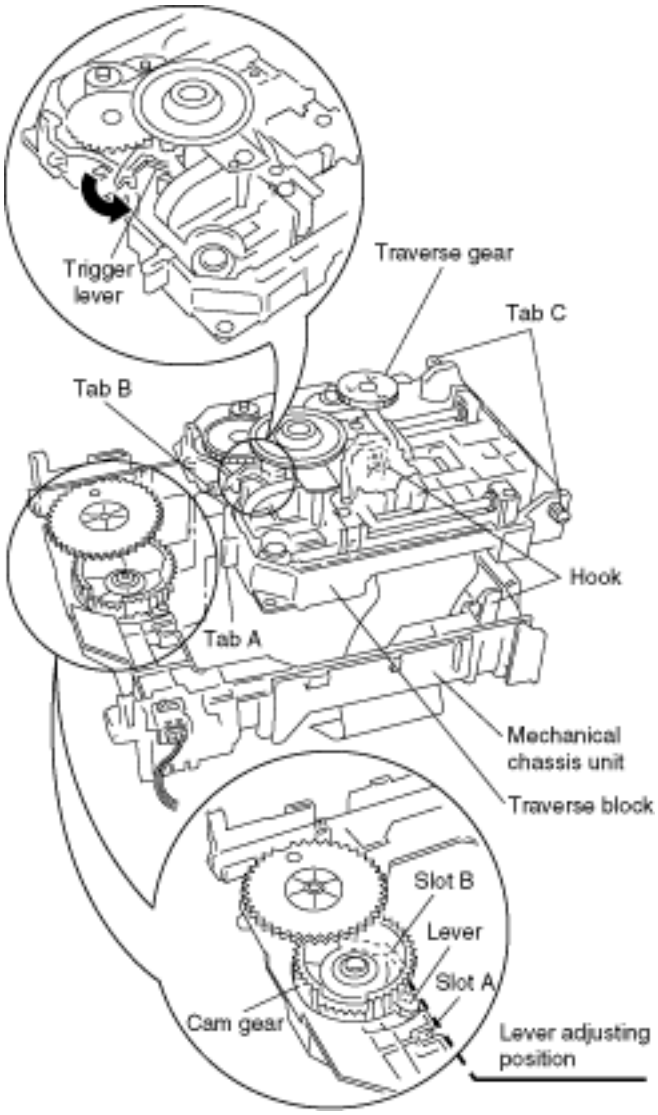
•Take the following precautions when reassembling the traverse block.

1. Turn traverse gear on the traverse block to let trigger lever turn rightward. (Front view)

2. Bring cam gear lever to the lever adjusting position at the end of mechanical chassis unit.

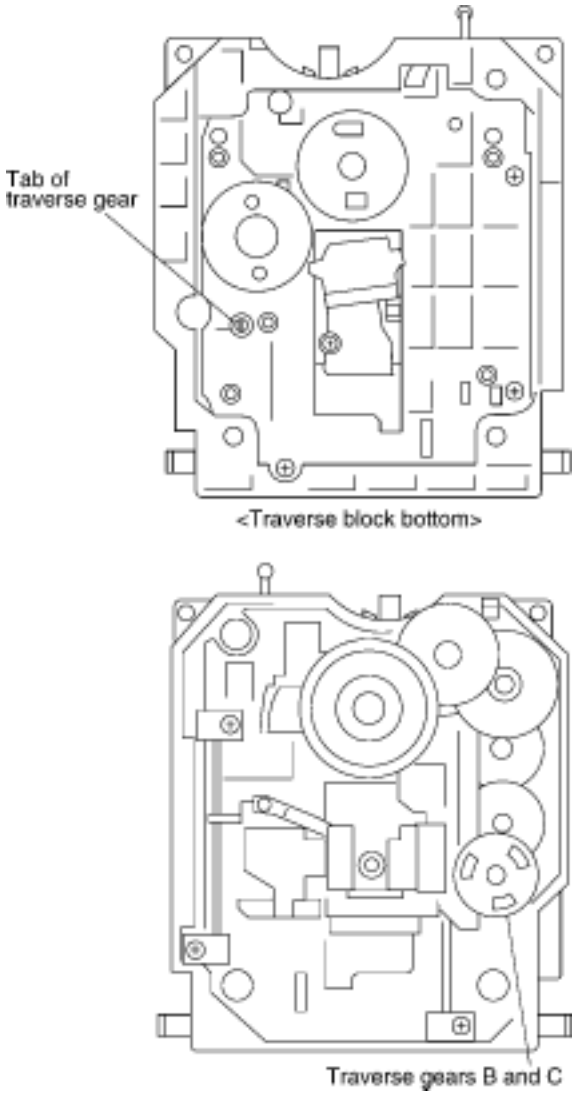
3. Put tabs A and B into slots A and B respectively.

   Place tabs C into hooks to mount the traverse block on mechanical chassis unit. (Slot A... Mechanical chassis unit, Slot B... Cam gear)



1. Disengage the tabs from the traverse gear.

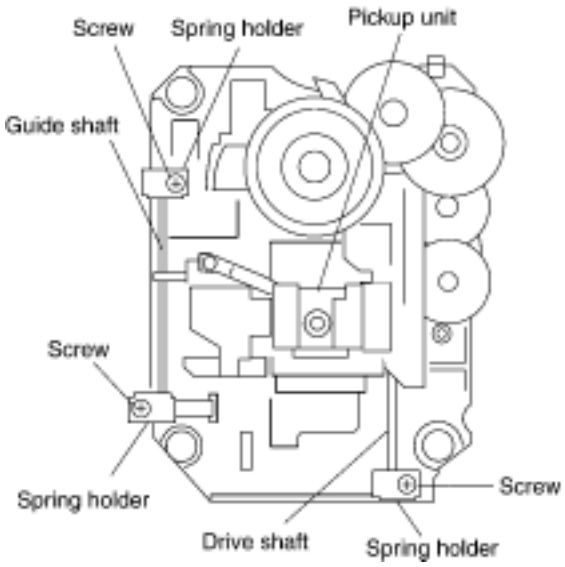
2. Remove the traverse gears B and C.



TOP PREVIOUS NEXT

8.7 Optical Pickup Unit

1. Unscrew the screws.
2. Remove the spring holders and the springs.
3. Pull out the drive shaft and guide shaft.



8.7.1 Precautions in optical pickup replacement

8.7.2 Disassembling the Optical Pickup Unit

8.7.3 Cautions to Be Taken When Replacing the Optical Pickup

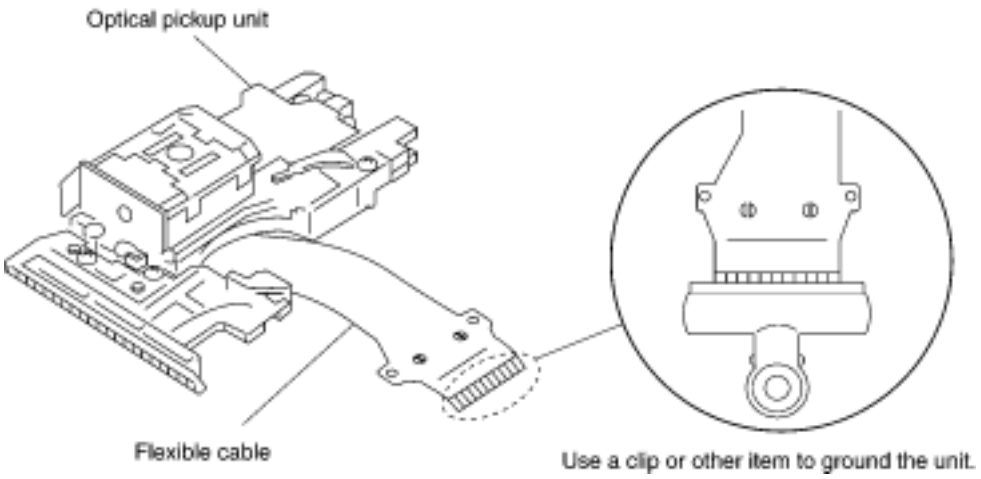
8.7.1 Precautions in optical pickup replacement

The optical pickup can be damaged by static electricity from your body. Be sure to take static electricity countermeasures when working around the optical pickup. (Refer to the related page in this Manual about the countermeasures.)

1. Do not touch laser diode, actuator and their peripheries.
2. Do not use tester to check laser diode. (Laser diode can be damaged easily.)
3. The use of soldering iron with anti-static feature is recommended when providing short-circuit to laser diode or when removing it.
4. Solder the land on flexible cable of optical pickup unit.

   Caution

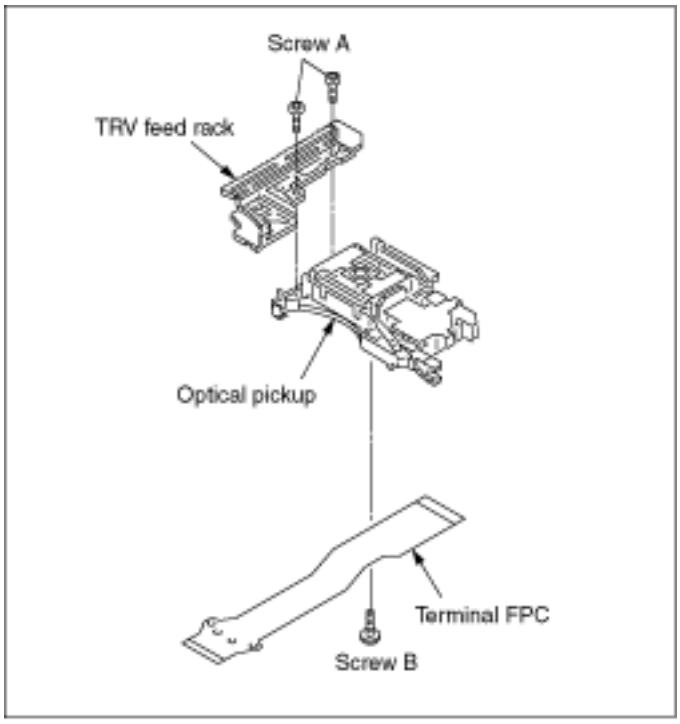
   - When using the soldering iron without anti-static feature, short-circuit the flexible cable terminal with a clip before short-circuiting the land.
   - After intended repair is finished, remove the solder for short-circuit of laser diode in a correct way by following the procedures described in this Manual.



8.7.2 Disassembling the Optical Pickup Unit

1. Remove the 2 screws A and remove the TRV feed rack.
2. Remove the screw B and remove the Terminal FPC.
3. Remove the optical pickup.

Fig. 1



8.7.3 Cautions to Be Taken When Replacing the Optical Pickup

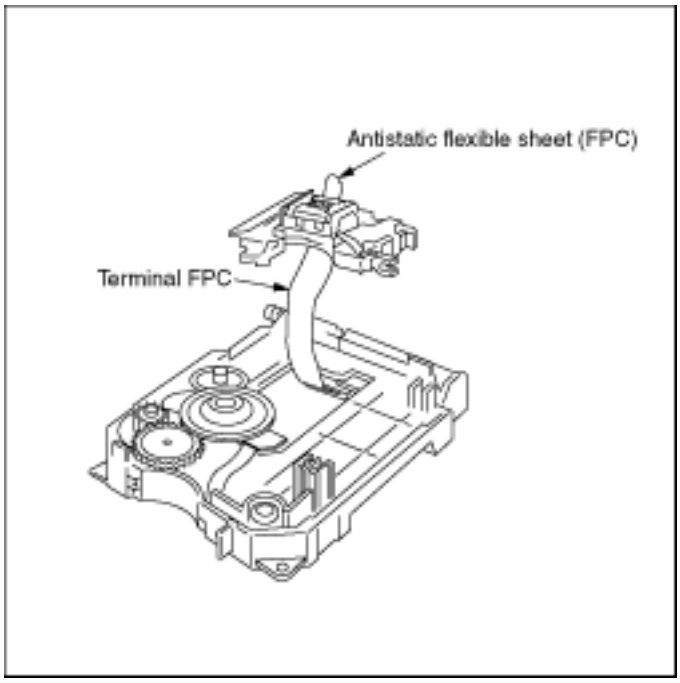
- An antistatic flexible sheet (FPC) is connected with the new optical pickup.

  Replace the optical pickup according to the following procedure.

1. Install the Terminal FPC, TRV feed rack on the optical pickup. (See Fig. 1)

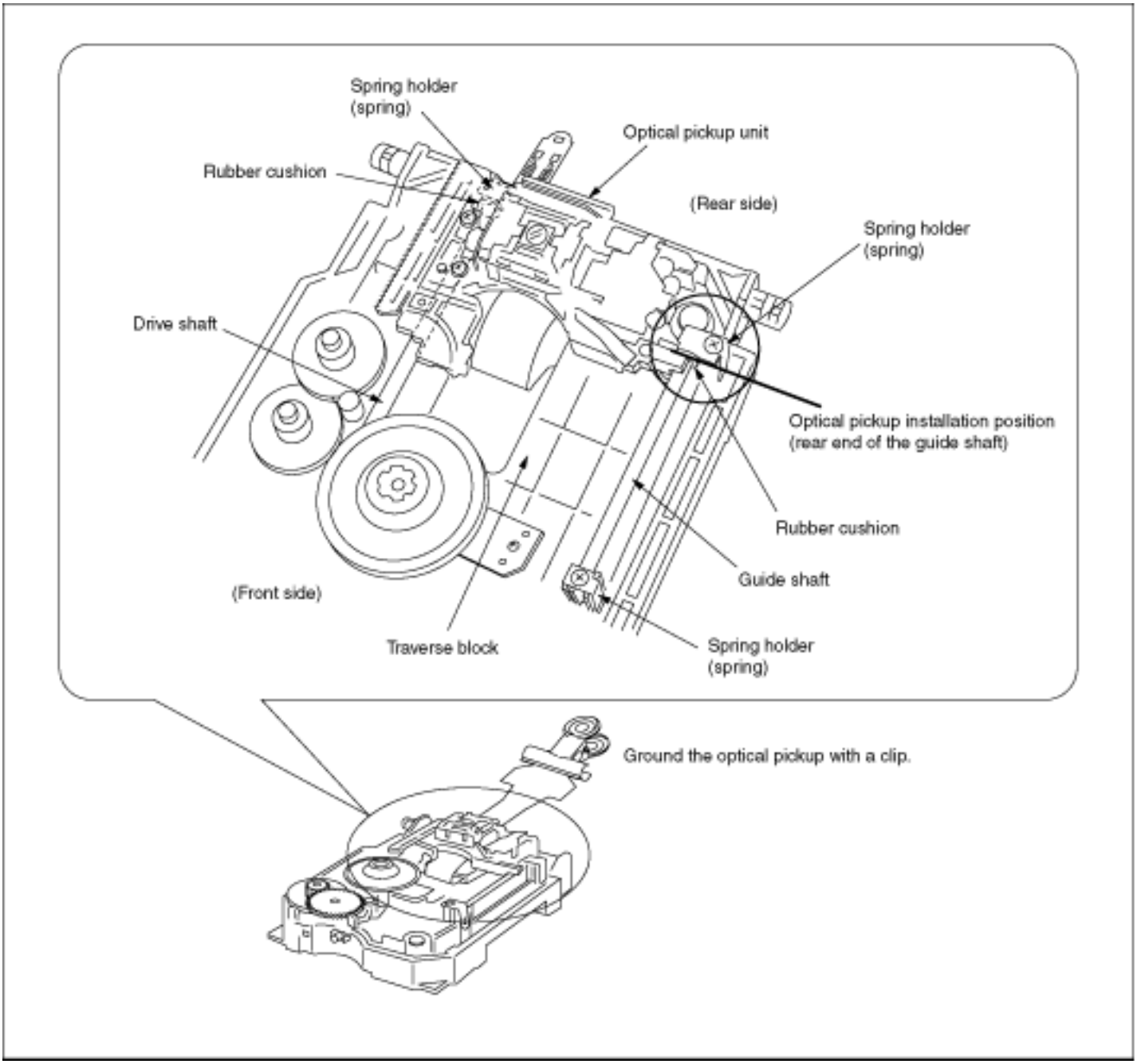
2. Install the Terminal FPC in the connector on the Motor C.B.A..

Fig. 2



3. Install the optical pickup unit, spring, drive shaft, guide shaft, rubber cushion, and spring holder on the traverse block.

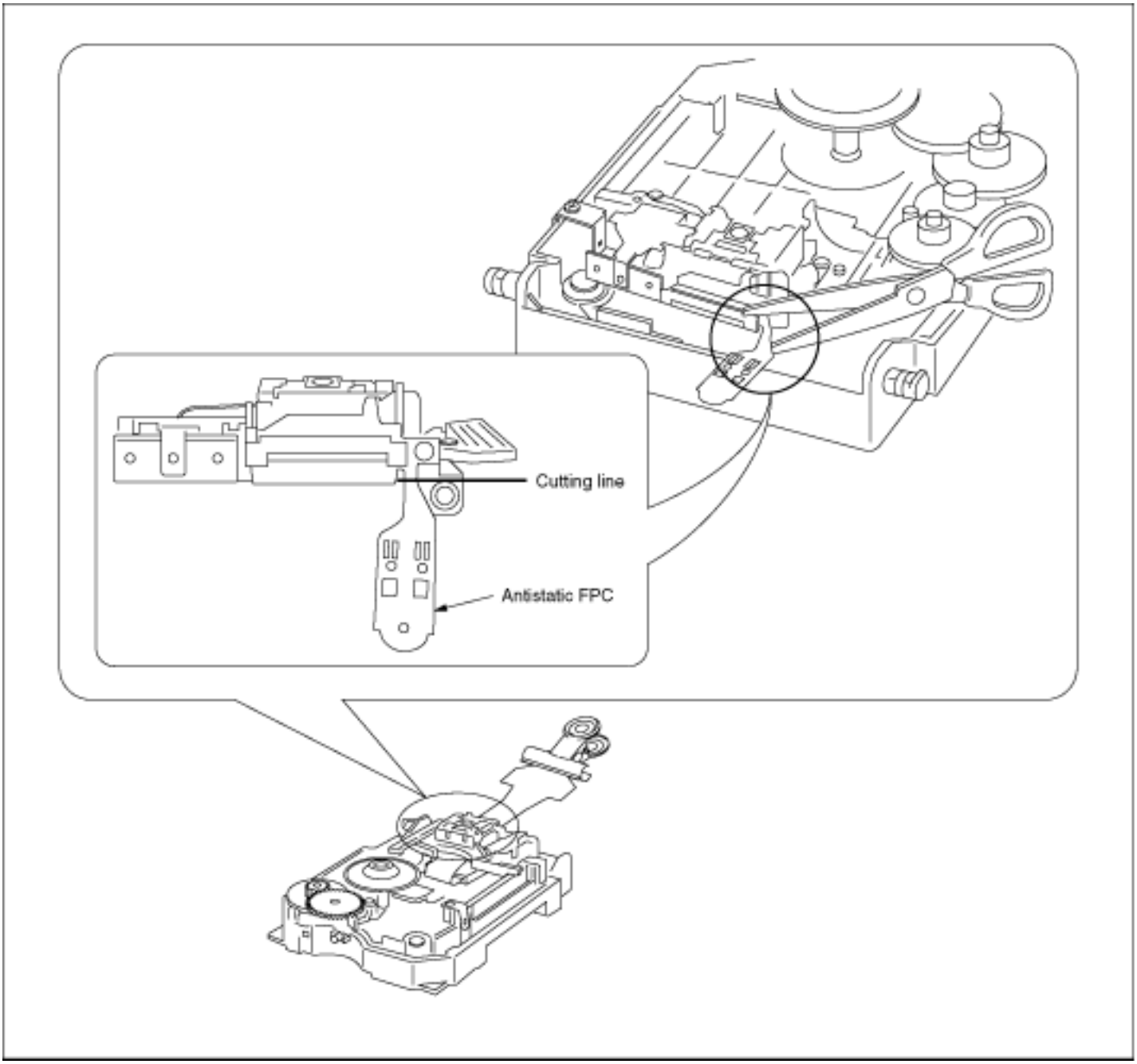
Fig. 3



Cautions to be taken when assembling the unit: Install the pickup unit so that it is located at the rear end of the guide shaft.)

4. Cut the antistatic flexible sheet for the optical pickup unit.

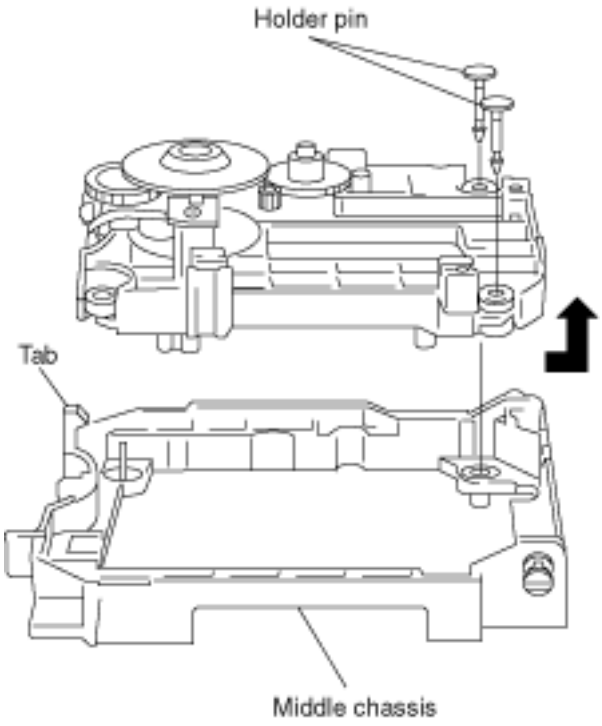
Fig. 4



TOP PREVIOUS NEXT

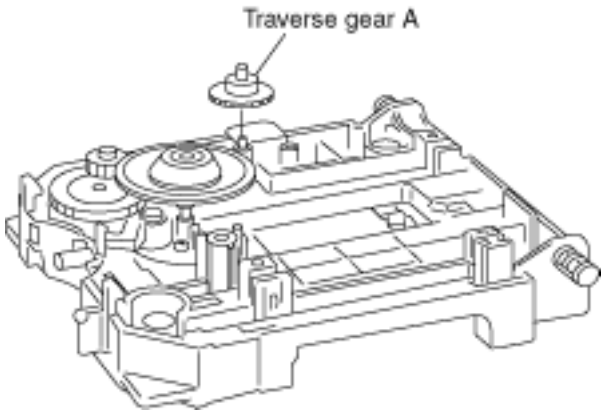
8.8 Disassembling the Middle Chassis

1. Remove the holder pins.
2. Remove the tab.
3. It lifts while pulling it in the direction of the arrow.



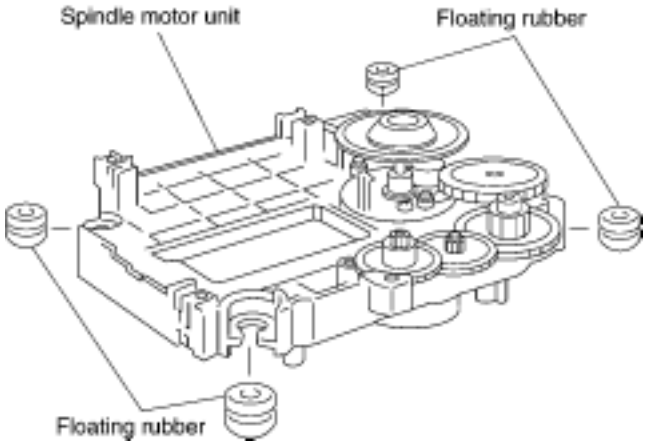
8.9 Disassembling the Traverse Gear A

1. Remove the traverse gear A.



8.10 Disassembling the Spindle Motor Unit

1. Remove the floating rubbers.



8.11 VCR Mechanism Adjustment Procedures

Refer to the Service Manual for R4-Mechanism Chassis. (Order No. VRD0202010C8)

9 SELF-DIAGNOSIS FUNCTION AND SERVICE MODES

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9.1 Optical Pickup Breakdown Diagnosis

9.2 Service Mode Table 1

9.3 DVD Self Diagnostic Function-Error Code

9.4 Last Error Code saved during NO PLAY

9.5 Service mode table 2

9.6 VCR Self-Diagnosis Result Display

9.7 Sales demonstration lock function

9.7.1 Setting

9.7.2 Cancellation

9.8 Handling After Completing Repairs

9.8.1 Method

9.8.2 Precautions

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9.1 Optical Pickup Breakdown Diagnosis

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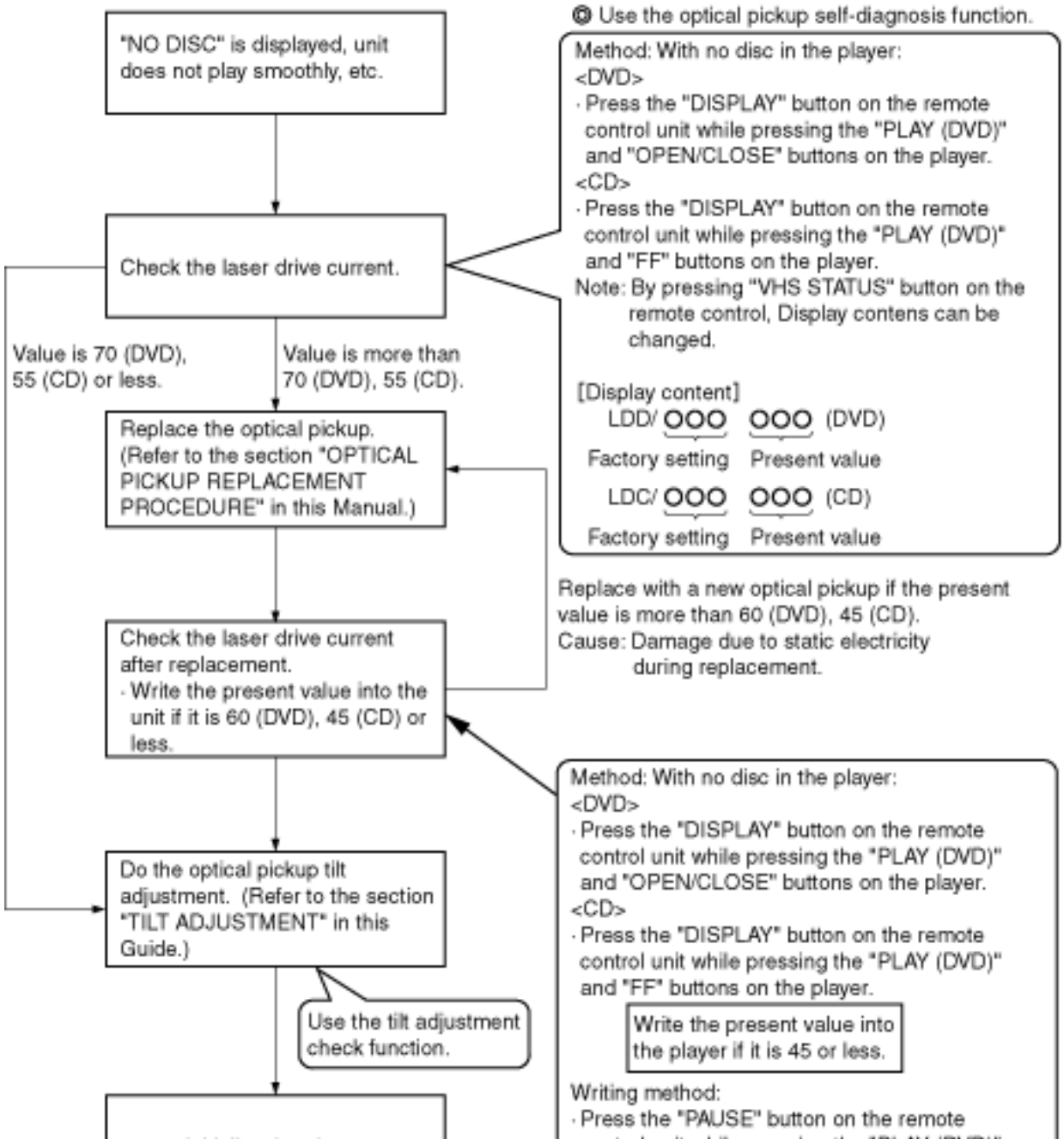
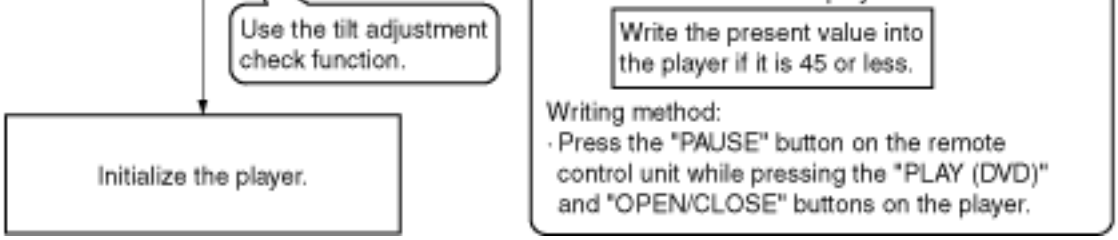
The optical pickup self-diagnosis function and tilt adjustment check function have been included in this unit. When repairing, use the following procedure for effective Self-diagnosis and tilt adjustment.Be sure to use the self-diagnosis functionbefore replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser drive current is more than 70 (DVD), 55(CD).

Note:

Press the power button to turn on the power, and check the value within three minutes before the unit warms up. (Otherwise, the result will be incorrect.)


"NO DISC" is displayed, unit does not play smoothly, etc.
Check the laser drive current.
Value is 70 (DVD), 55 (CD) or less.
Value is more than 70 (DVD), 55 (CD).
Replace the optical pickup. (Refer to the section "OPTICAL PICKUP REPLACEMENT PROCEDURE" in this Manual.)
Check the laser drive current after replacement.
· Write the present value into the unit if it is 60 (DVD), 45 (CD) or less.
Do the optical pickup tilt adjustment. (Refer to the section "TILT ADJUSTMENT" in this Guide.)
Use the tilt adjustment check function.
Use the optical pickup self-diagnosis function.
Method: With no disc in the player:
<DVD>
· Press the "DISPLAY" button on the remote control unit while pressing the "PLAY (DVD)" and "OPEN/CLOSE" buttons on the player.
<CD>
· Press the "DISPLAY" button on the remote control unit while pressing the "PLAY (DVD)" and "FF" buttons on the player.
Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.
[Display content]
LDD/ OOO OOO (DVD)
Factory setting Present value
LDC/ OOO OOO (CD)
Factory setting Present value
Replace with a new optical pickup if the present value is more than 60 (DVD), 45 (CD).
Cause: Damage due to static electricity during replacement.
Method: With no disc in the player:
<DVD>
· Press the "DISPLAY" button on the remote control unit while pressing the "PLAY (DVD)" and "OPEN/CLOSE" buttons on the player.
<CD>
· Press the "DISPLAY" button on the remote control unit while pressing the "PLAY (DVD)" and "FF" buttons on the player.
Write the present value into the player if it is 45 or less.
Writing method:
· Press the "PAUSE" button on the remote


Use the tilt adjustment check function.
Initialize the player.
Write the present value into the player if it is 45 or less.
Writing method:
· Press the "PAUSE" button on the remote control unit while pressing the "PLAY (DVD)" and "OPEN/CLOSE" buttons on the player.

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9.2 Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and remote control unit.

Player buttons	Remote control unit buttons	Application	Note
PLAY (DVD) + OPEN/CLOSE	0	Displaying the UHF display F_ _ _	Refer to section 9.3. Self-Diagnosis Function (UHF Display).
	5	Jitter check, tilt adjustment *Display shows J_xxx/yyy_zz Note: By pressing VHS STATUS button on the remote control, Displaycontens can be changed. "yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is the error counter, while "zz" is the focus drive value. Refer to section 11.4. for Optical Pickup Tilt Adjustment Procedure.	Refer to section 11.4. Optical Pickup Tilt Adjustment
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check the IC8101 FLASH ROM program.
	9	Lighting Confirmation Function of Display Tube	
	DISPLAY	Checking the laser drive current	Refer to Optical Pickup Replacement Procedure.
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	
PLAY (DVD) + REW + OPEN/CLOSE	----------	Initializing the DVD player (restoring factory preset settings)	Refer to section 9.5. Initializing the DVD player.

9.3 DVD Self Diagnostic Function-Error Code

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Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	Defect 4
	U, H error					
U11	Focus error					
U15	Non finalized DVD-R disc playback error					
H01	Tray loading error					
H02	Spindle servo error	(Spindle servo, DV2 (IC8001) SP motor, CLV servo error)				
H03	Traverse servo error					
H04	Tracking servo error					
H05	Seek error					
H06	Power error	Cannot switch off the power because of the panel and system computer communication error				
H07	Spindle motor drive error		Spindle motor ass y			
	DSC related					
F500	DSC error	DV2 (IC8001) stops in the occurence of servo error (starup, focus error, etc)	Optical pickup	DV2 (IC8001)	servo drive	
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	DV2 (IC8001)			
F502	DSC Time out error	Similar disposal as F500	Optical pickup	DV2 (IC8001)	servo drive	
F503	DSC communication Failure	Communication error (result error occured although communication command was sent)	DV2 (IC8001)			
F505	DSC Attention error	Similar disposal as F500	Optical pickup	DV2 (IC8001)	servo drive	
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	DV2 (IC8001)		
	ODC related					
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	DV2 (IC8001)			
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	DV2 (IC8001)			

F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable				
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc				
F610	ODC abnormality	No permission for command execution	DV2 (IC8001)			
F611	6626 QCODE don t read Error	Access failure to seek address in CD series	DV2 (IC8001)			
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	DV2 (IC8001)			
F630	No reply to KEY DET enquiry	(for internal use only)				
F631	CPPM KEY DET is not available till the FILE terminal	(CPPM file system is unreadable caused by scratches)	DISC	CPPM (*1)		
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	CPPM (*1)		
	Disc code					
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC			
	HIC Error					
F4FF	Force initialize failure (time out)		DV2 (IC8001)			
	Micro computer error					
F700	MBX overflow	When replying message to disc manager				
F701	Message command does not end	Next message is sent before replying to disc manager				
F702	Message command changes	Message is changed before it is sent as a reply to disc manager				
F880	Task number is not appropriate	Message coming from a non-existing task				
F890	Sending message when message is being sent to AV task	Sending message to AV task				
F891	Message couldn t be sent to AV task	Begin sending message to AV task				
F893	FROM falsification		FROM (IC8101)	DV2 (IC8001)		
F894	EEPROM abnormality		Serial communication on lone			
F895	Language area abnormality	Firm version agreement check for factory preset setting failure prevention	FROM (IC8101)			
F896	No existence model	Firm version agreement check for factory preset setting failure prevention				

F897	Initialize is not completed	Initialize completion check for factory preset setting failure prevention				
F898	Disagreement of hardware and software	Unsuitable combination of AV DECORDER, SDRAM and FLASH ROM (firmware)				
F8A0	Message command is not appropriate	Begin sending message to AV task				

Note:

An error code will be canceled if a power supply is turned OFF.

*1: CPPM is the copy guard function beforehand written in the disk for protection of copyrights.

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9.4 Last Error Code saved during NO PLAY

Error code	Error Content
F0BF	6) Cannot playback because physical layer is not recoginizable
F0C0	8) DVD: Cannot playback because it is not DVD Video/Adio/VR
F0C1	9) DVD: Prohibited by the restricted region code
F0C2	A) DVD: PAL restricted playback
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title
F0C4	C) VCD: Prohibited because it is in PHOTO CD fromat
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA

9.5 Service mode table 2

Pressing various button combinations on the player and remote control unit can activate the service modes.

Item	Player mode and button combination	Function	Display	Cancellation method
Jitter check	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and "5" button on the remote control unit.	Jitter check Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	J _xxx/yyy_zz Focus drive value Read error counter Jitter rate Jitter check mode Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation. Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Press STOP or OPEN button.
Error code check	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and "0" button on the remote control unit. " With pointing of cursor up and down on remote control unit, the panel controller switches serial number of history and sends out the command	Error code check The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: -> nn UXX Error code = 0 x DBXX is expressed: -> nn HXX Error code = 0 x DXXX is expressed: -> nn FXXX Error code = 0 x 0000 is expressed: -> nn F--- " "nn" denotes the serial number of history. " "xx" denotes the error code.	Cancelled automatically 5 seconds later.
Initial setting of laser drive current	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and PAUSE button on the remote control unit.	Initial setting of laser drive currentInitial current value for each of DVD laser and CD laser is separately saved in EEPROM.	LDO/034_028 CD laser current measurement DVD laser current measurement Laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is witched on. Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.
DVD laser drive current measurement	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and DISPLAY button on the remote control unit.	DVD laser drive current measurement ·DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	LDD/034_032 Measured current Initial current stored in EEPROM DVD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA. Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.
ADSC internal RAM data check	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and RETURN button on the remote control unit.	ADSC internal RAM data check ·ADSC internal RAM data is read out and displayed. Change the address with CLEAR key operation to show the data for 11 addresses.	A_FBO/A_0100 RAM data for specified address Address ADSC internal RAM data check mode The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFAh is 6901h. Note: By pressing "VHS STATUS" button on the remote control,Display contens can be changed.	Press STOP or OPEN button.
Servo process display	In STOP (no disc) mode, press PLAY (DVD) and FF buttons on the player, and "7" button on the	Servo process display The servo process from STOP to ACCESS is displayed.		POWER OFF.

			the remote control,Display contens can be changed.	
Servo process display	In STOP (no disc) mode, press PLAY (DVD) and FF buttons on the player, and "7" button on the remote control unit.	Servo process display The servo process from STOP to ACCESS is displayed.	———	POWER OFF.

Item	Player mode and button combination	Function	Display	Cancellation method
CD laser drive current measurement	In STOP (no disc) mode, press PLAY (DVD) and FF buttons on the player, and DISPLAY button on the remote control unit.	CD laser drive current measurement CD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	LDC/028_026 ↑ ↑ ↑ └ Measured current └ Initial current stored in EEPROM └ CD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA. Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.
Version display	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and "7" button on the remote control unit.	Version display	srrrxx/yzzz ↑ ↑ ↑ ↑ ↑ └ System controller release number └ System controller model number └ System controller generation └ Panel controller release number └ Panel controller model number Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.
Lighting of display tube	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and "9" button on the remote control unit.	Lighitng of display tube	———	Power Off
Dealer's lock	Disc in the unit, press STOP (DVD) button on the player, and POWER button on the remote control unit more than 1 second.	Dealer's lock The lock is switched ON or OFF. When dealer's lock is ON, it prohibits switching off of the secondary power and tray opening. When the lock is switched, its ON/OFF status is stored in EEPROM.	· "LOCK" sign appears when dealer's lock is switched on, or when secondary power key or tray opening key is pressed while the lock is on. ·"UNLOCK" sign appears when dealer's lock is switched off.	Repeat the same operation.
Initialization	In STOP (no disc) mode, press PLAY (DVD), REW and OPEN buttons on the player for 3 seconds or longer.	Initialization User settings are cancelled and player is initialized to factory setting.	"INIT"	
Region display	In STOP (no disc) mode, press PLAY (DVD) and OPEN buttons on the player, and "6" button on the remote control unit.	Region display	wxyzzz ↑ ↑ ↑ └ Panel controller jumper information └ N: NTSC / 6: PAL60 └ N: noPAL / P: PAL └ Region No.	Cancelled automatically 5 seconds later.
Timer 1 check	In STOP (no disc) mode, press PLAY (DVD) and FF buttons on the player, and "5" button on the remote control unit.	Timer 1 check Laser operation timer is measured separately for DVD laser and CD laser.	T11234/5678 (display 1/display 2) Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999". Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.
Timer 1 reset	While displaying Timer 1 data, press STOP (DVD) and FF buttons on the player, and "5" button on the remote control unit. (During displaying "Timer 1 check")	Timer 1 reset Laser operation timer of both DVD laser and CD laser is reset all at once.	T10000/0000 (display 1/display 2) Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.

Item	Player mode and button combination	Function	Display	Cancellation method
Timer 2 check	In STOP (no disc) mode, press PLAY (DVD) and FF buttons on the player, and "6" button on the remote control unit.	Timer 2 check Spindle motor operation timer	T21234/5 (display 1/display 2) Time is shown in 5 digits of decimal notation in a unit of 10 hours. "00000" will follow "99999". Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.
Timer 2 reset	While displaying Timer 2 data, press STOP (DVD) and FF buttons on the player and "6" button on the remote control unit. (During displaying "Timer 2 check")	Timer 2 reset Spindle motor operation timer reset.	T20000/0 (display 1/display2) Note: By pressing "VHS STATUS" button on the remote control, Display contens can be changed.	Cancelled automatically 5 seconds later.

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9.6 VCR Self-Diagnosis Result Display

Refer to the Service Manual for R4-Mechanism CHassis. (Order No.: VRD0202010C8)

9.7 Sales demonstration lock function

This function prevents discs from being lost when the unit is used for sales demonstrations by disabling the disc eject function. "LOCK" is displayed on the unit, and ordinary operation is disabled.

9.7.1 Setting

9.7.2 Cancellation

9.7.1 Setting

The sales demonstration lock is set by simultaneously pressing STOP (DVD) button on the player and POWER button on the remote control unit more than 1 second.

9.7.2 Cancellation

The lock can be cancelled by the same procedure as used in setting. ("UNLOCK" is displayed on cancellation. Disconnecting the power cable from power outlet does not cancel the lock.)

9.8 Handling After Completing Repairs

Use the following procedure after completing repairs.

9.8.1 Method

9.8.2 Precautions

9.8.1 Method

Confirm that the power is turned on:

1. Press the "OPEN/CLOSE" button to open/close the tray.
2. Press the "POWER" button to turn on/off the power.
3. Disconnect the power plug from the outlet.

9.8.2 Precautions

When disconnecting the power plug while the tray is still open, close the tray manually.

10 SERVICE PRECAUTIONS

TOP PREVIOUS NEXT

10.1 Recovery after the DVD player is repaired

10.2 Firmware version-up of the DVD player

TOP PREVIOUS NEXT

10.1 Recovery after the DVD player is repaired

- When FROM and/or DVD module P.C.B. has been replaced, carry out the recovering process to optimize the drive.

  Playback the recovery disk to process the recovery automatically.

- Recovery disc [Product number: RFKZD03R005] (RFKZD03R004 can not be used.)

- Performing recovery

  1. Load the recovery disc RFKZD03R005 on to the player and run it.

  2. Recovery is performed automatically. When it is finished, a message appears on the screen.

  3. Remove the recovery disc.

  4. Turn off the power.

Note:

This unit requires no initialization process carried out after the traditional DVD players were repaired.

When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of "Initialization" in 9.5. is carried out. Write down the contents of the setting before recovery processing,and reset the player.

10.2 Firmware version-up of the DVD player

- In order to optimize the drive operation, the firmware of the DVD player may be renewed to improve the quality including operationability and playerbility by updating the firmware onto the substandard disc.
- After version-up, recovery processing is executed automatically.
- Part number of the recovery disc for version-up will be noticed when it is supplied.
- Updating firmware

    1. Load the recovery disc that is supplied to the player and run it.
    2. Firmware version of the player is automatically checked. Appropriate message appears whenever necessary.
    3. Using remote controller´s cursor key, select whether version updating is to be done or not. (Selection of Yes/No)
    4. a. If Yes is selected, version updating is performed.

       b. If No is selected, only recovery is performed.
    5. a. When updating is finished, remove the disc according to the message appearing on the screen.

       b. Remove the disc according to the message appearing on the screen.
    6. Turn off the power.

Note:

If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.

In such a case, replace the FROM and carry out the version-up again.

11 ADJUSTMENT PROCEDURES

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11.1 Service Tools and Equipment

11.2 Important points in adjustment

11.2.1 Important points in optical adjustment

11.2.2 Important points in electrical adjustment

11.3 Storing and Handling Test Discs

11.4 DVD Optical adjustment

11.4.1 Optical pickup tilt adjustment

11.4.1.1 Adjustment procedure

11.4.1.2 Important points

11.4.1.3 Check after adjustment

11.4.1.4 Procedure for screw lock

11.5 VCR ELECTRICAL ADJUSTMENT PROCEDURES

11.5.1 TEST EQUIPMENT

11.5.2 SERVO SECTION

TOP PREVIOUS NEXT

11.1 Service Tools and Equipment

TOP PREVIOUS NEXT

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
	Hex wrench	Available on sales route.
Inspection	Extension cable (MAIN C.B.A. to Power C.B.A.)	RFKZ0171
	Extension cable (DVD Module C.B.A. to Main C.B.A.)	RFKZ0170
	Extension cable (DVD Module C.B.A. to Power C.B.A.)	VFK1730
Others	Grease 1	RFKXGAK152
	Grease 2	RFKXPG641
	Oil (1)	RFKXGA1280
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD03R005

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11.2 Important points in adjustment

TOP PREVIOUS NEXT

11.2.1 Important points in optical adjustment

11.2.2 Important points in electrical adjustment

TOP PREVIOUS NEXT

11.2.1 Important points in optical adjustment

- Before starting optical adjustment, be sure to take anti-static measures.
- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit
2. Spindle motor unit
3. Optical pickup peripheral parts (such as rail)

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, do adjustment if there is a noticeable degradation in picture quality. Optical adjustments cannot be made inside the optical pickup. Adjustment isgenerally unnecessary after replacing the traverse unit.

11.2.2 Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

11.3 Storing and Handling Test Discs

- Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.

2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a cool place where they are not exposed to direct sunlight or air from air conditioners.

3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.

4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

11.4 DVD Optical adjustment

TOP PREVIOUS NEXT

11.4.1 Optical pickup tilt adjustment

11.4.1.1 Adjustment procedure

11.4.1.2 Important points

11.4.1.3 Check after adjustment

11.4.1.4 Procedure for screw lock

TOP PREVIOUS NEXT

11.4.1 Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screw Tilt adjustment screw	T01 (inner periphery) play T43 (outer periphery) play	DVDR-S15 or DVDT-S01
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjust to the minimum jitter value.	

11.4.1.1 Adjustment procedure

11.4.1.2 Important points

11.4.1.3 Check after adjustment

11.4.1.4 Procedure for screw lock

11.4.1.1 Adjustment procedure

1. Place the Unit in SERVICE POSITION
2. While pressing PLAY (DVD) and OPEN/CLOSE buttons on the main unit, press "5" on the remote control unit simultaneously.
3. Confirm that "J_xxx" is shown on the front display.

   For your information:

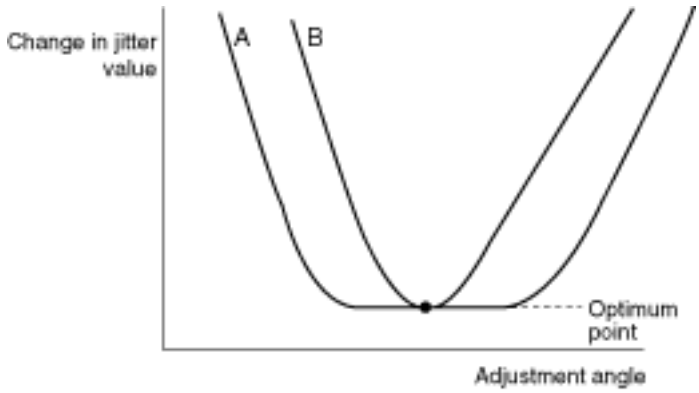
   "yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is the error counter, while "zz" is the focus drive value.

   Note:

   Jitter value appears on the front display.
4. Play test disc T01 (inner periphery).
5. Adjust tangential adjustment screw so that the jitter value is minimized.
6. Play test disc T43 (outer periphery).
7. Adjust tilt adjustment screw 1 so that the jitter value is minimized.
8. Play test disc T43 (outer periphery).
9. Adjust tilt adjustment screw 2 so that the jitter value is minimized.
10. Repeat adjusting tilt adjustment screws 1 and 2 alternately until the jitter value is minimized.

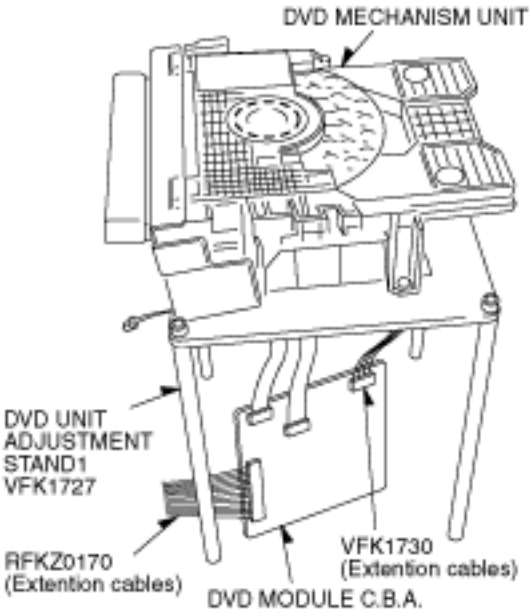
11.4.1.2 Important points

1. Do tangetial adjustment first, then tilt adjustment.
2. Repeat adjusting two or three times to find the optimum point.
3. Finish the procedure with tilt adjustment.



Jitter value depends on the model:

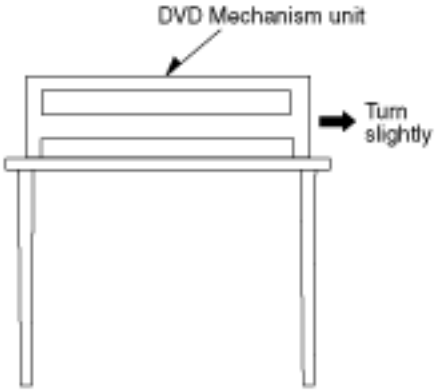
1. If the jitter value changes like B, the optimum point is easy to find.
2. If the jitter value changes like A, set the optimum point near the middle.



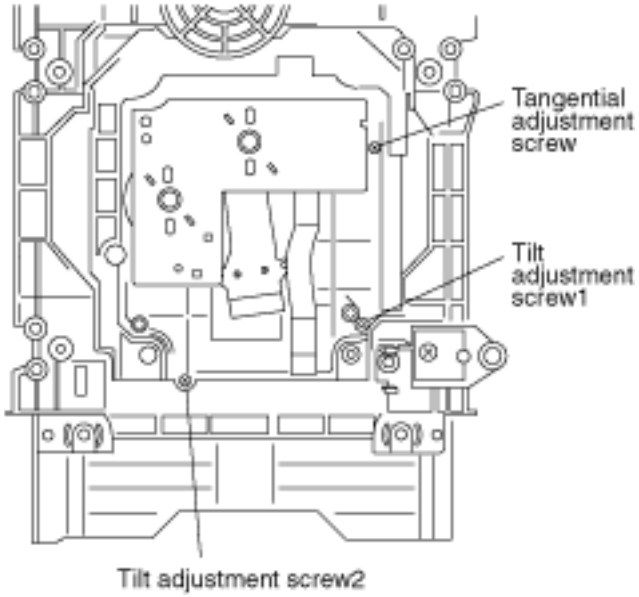
Note:

When adjust Tilt adjustment screw 2, turn the DVD unit slightly so that the Tilt adjustment screw 2

could be adjusted.



<DVD Mechanism unit bottom>



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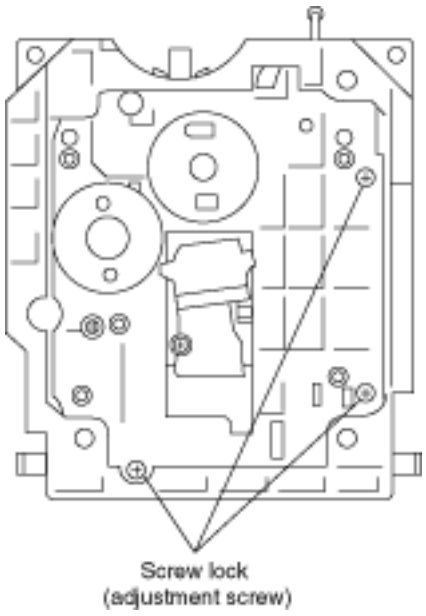
11.4.1.3 Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping. After adjustment is finished, lock each adjustment screw in position using screw lock.

11.4.1.4 Procedure for screw lock

1. After adjustment, remove top cover, tray, clamper base and traverse unit in this sequence.
2. Lay the traverse unit upside down, and fix adjustment screw with screw lock.
3. After fixing, reassemble traverse unit, clamper base, tray and top cover.



11.5 VCR ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete adjustment procedures required for electric circuits of VCR.

11.5.1 TEST EQUIPMENT

11.5.2 SERVO SECTION

11.5.1 TEST EQUIPMENT

The following items will be required when performing electrical adjustment.

1. VHS Alignment Tape. (VFJ8125H3F)
2. Monitor

11.5.2 SERVO SECTION

PG SHIFTER ADJUSTMENT

	PROCEDURE	F.I.P. DISPLAY
1.	Turn on the Service Mode 1.Press the FF key and the EJECT key simultaneously for more than 3 seconds.	
2.	Activate the Service Mode 2 While keep pressing FF key, press the EJECT key in twice.	
3.	Activate the Entering Mode. Press the EJECT key for more than 3 seconds.	
4.	Set the Mode 2. Press the CH UP key once.	
5.	Insert the alignment cassette tape (VFJ8125H3F) The PG Shifter Adjustment starts automatically.	
6.	When the sequence of the automatic adjustment has been terminated, the following action has been made. * SUCCEED: The cassette tape is ejected. * ERROR: The "F20", "F21", "F22" or "F23"is displayed. Refer to next PG Shifter Adjustment Self-Diagnosis Indication Table regarding the details of the indications.	
7.	Exit from Service Mode. Press FF and EJECT keys simultaneously in 6 times. Then the FIP becomes normal indication.	

PG SHIFTER AUTOMATIC ADJUSTMENT SELF-DIAGNOSIS INDICATION

F20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)
F21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)

F22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is our of specification.
F23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)

NOTE:

After replacing the DD Cylinder, the Tape Interchangeability adjustment (X-Value Adjustment, P2 and P3 Posts Adjustment) should be performed after the PG Shifter Automatic Adjustment.

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12 ABBREVIATIONS

[DVD SECTION]

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMPOUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCKSELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIPSELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT

D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATAOUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
		ENCODER SELECT
	ENCSEL	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETMCLK	EXTERNAL S CLOCK (54MHz)
	ETSCLK	
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORYSERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP

O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK	CHANNEL PLL CLOCK
	PLLOK	PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVEA
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
	RSV	RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER
	SCL	SERIAL CLOCK
	SCLK	SERIAL CLOCK
	SDA	SERIAL DATA
	SEG0~UP	FL SEGMENT OUTPUT
	SELCLK	SELECTCLOCK
	SEN	SERIAL PORT ENABLE
	SIN1, 2	SERIAL DATA IN
	SOUT1, 2	SERIAL DATA OUT
	SPDI	SERIAL PORT DATA INPUT
	SPDO	SERIAL PORT DATA OUTPUT
	SPEN	SERIAL PORT R/W ENABLE
	SPRCLK	SERIAL PORT READ CLOCK
	SPWCLK	SERIAL PORT WRITE CLOCK
	SQCK	SUB CODE Q CLOCK
	SQCX	SUBCODE Q DATA READ CLOCK
	SRDATA	SERIAL DATA
	SRMADR	SRAM ADDRESS BUS
	SRMDT0~7	SRAM DATA BUS 0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAM DATA CLOCK
	STD0~UP	STREAM DATA
	STENABLE	STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY SELECT
	STVALID	STREAM DATAVALIDITY
	SUBC	SUB CODE SERIAL
	SBCK	SUB CODE CLOCK
	SUBQ	SUB CODE Q DATA
	SYSCLK	SYSTEM CLOCK

T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSSSIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLYVOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X´ TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPTREQUEST
	XI	X´ TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X´ TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIPSELECT
	XVDS	X V-DEC CONTROL BUS STROBE
	XVSYNCO	X VERTICAL SYNC OUTPUT

[VCR SECTION]

TOP PREVIOUS NEXT

13 INPUT/ OUTPUT CHART

TOP PREVIOUS NEXT

13.1 INPUT / OUTPUT CHART FOR IC6001

TOP PREVIOUS NEXT

13.1 INPUT/ OUTPUT CHART FOR IC6001

14 WAVEFORM TABLE& VOLTAGE CHART

TOP PREVIOUS NEXT

14.1 WAVEFORM TABLE

14.2 VOLTAGE CHART

TOP PREVIOUS NEXT

14.1 WAVEFORM TABLE

14.2 VOLTAGE CHART

15 BLOCK DIAGRAMS

TOP PREVIOUS NEXT

15.1 POWER BLOCK DIAGRAM

15.2 SYSTEM CONTROL & SERVO BLOCK DIAGRAM

15.3 LUMINANCE & CHROMINANCE BLOCK DIAGRAM

15.4 AUDIO BLOCK DIAGRAM

15.5 DVD INTERFACE BLOCK DIAGRAM

15.6 DVD (SERVO) BLOCK DIAGRAM

15.7 DVD (VIDEO / AUDIO) BLOCK DIAGRAM

TOP PREVIOUS NEXT

15.1 POWER BLOCK DIAGRAM

15.2 SYSTEM CONTROL& SERVO BLOCK DIAGRAM

15.3 LUMINANCE& CHROMINANCE BLOCK DIAGRAM

15.4 AUDIO BLOCK DIAGRAM

15.5 DVD INTERFACE BLOCK DIAGRAM

15.6 DVD (SERVO) BLOCK DIAGRAM

15.7 DVD (VIDEO/AUDIO) BLOCK DIAGRAM

16 SCHEMATIC DIAGRAMS

TOP PREVIOUS NEXT

16.1 POWER SCHEMATIC DIAGRAM

16.2 POWER SUPPLY / RF SECTION IN MAIN SCHEMATIC DIAGRAM

16.3 TIMER SECTION IN MAIN SCHEMATIC DIAGRAM

16.4 SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

16.5 LUMINANCE & CHROMINANCE / AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

16.6 Hi-Fi AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

16.7 DECORDER SECTION IN MAIN SCHEMATIC DIAGRAM (NV-VP32GL)

16.8 DVD INTERFACE SECTION IN MAIN SCHEMATIC DIAGRAM

16.9 FRONT SW SCHEMATIC DIAGRAM

16.10 FRONT JACK SCHEMATIC DIAGRAM

16.11 DVD MODULE SCHEMATIC DIAGRAM

16.12 MOTOR SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

16.1 POWER SCHEMATIC DIAGRAM

16.2 POWER SUPPLY/RF SECTION IN MAIN SCHEMATIC DIAGRAM

16.3 TIMER SECTION IN MAIN SCHEMATIC DIAGRAM

16.4 SYSTEM CONTROL& SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

16.5 LUMINANCE& CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

16.6 Hi-Fi AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

16.7 DECORDER SECTION IN MAIN SCHEMATIC DIAGRAM (NV-VP32GL)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

16.8 DVD INTERFACE SECTION IN MAIN SCHEMATIC DIAGRAM

16.9 FRONT SW SCHEMATIC DIAGRAM

16.10 FRONT JACK SCHEMATIC DIAGRAM

16.11 DVD MODULE SCHEMATIC DIAGRAM

16.12 MOTOR SCHEMATIC DIAGRAM

17 CIRCUIT BOARD ASSEMBLIES

TOP PREVIOUS NEXT

17.1 POWER C.B.A.

17.2 MAIN C.B.A.

17.3 FRONT SW C.B.A.

17.4 FRONT JACK C.B.A.

17.5 DVD MODULE C.B.A.

17.6 MOTOR C.B.A.

TOP PREVIOUS NEXT

17.1 POWER C.B.A.

17.2 MAIN C.B.A.

17.3 FRONT SW C.B.A.

17.4 FRONT JACK C.B.A.

17.5 DVD MODULE C.B.A.

17.6 MOTOR C.B.A.

18 EXPLODED VIEWS

TOP PREVIOUS NEXT

18.1 VCR MECHANISM CHASSIS PARTS SECTION

18.2 DVD MECHANISM CHASSIS PARTS SECTION

18.3 CASING PARTS SECTION

18.4 PACKING PARTS SECTION

TOP PREVIOUS NEXT

18.1 VCR MECHANISM CHASSIS PARTS SECTION

18.2 DVD MECHANISM CHASSIS PARTS SECTION

18.3 CASING PARTS SECTION

18.4 PACKING PARTS SECTION

19 REPLACEMENT PARTS LIST

TOP PREVIOUS NEXT

19.1 VCR MECHANISM CHASSIS PARTS SECTION PARTS LIST

19.2 DVD MECHANISM PARTS SECTION PARTS LIST

19.3 CASING PARTS SECTION PARTS LIST

19.4 PACKING PARTS SECTION PARTS LIST

19.5 ELECTRICAL PARTS LIST

TOP PREVIOUS NEXT

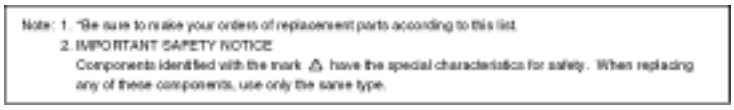
19.1 VCR MECHANISM CHASSIS PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

Note:

*All parts except parts mentioned [PAVC-SPC] in the Remarks column are supplied by PAVCSG.

Parts mentioned [PAVC-SPC] are supplied by PAVC-SPC.


Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
1	VEG1642-DKIT	CYLINDER UNIT	
2	VEM0750	CAPSTAN UNIT	
3	L1AZ00000004	FE HEAD UNIT	
4	VDG1510	INTERMEDIATE GEAR	
5	VDG1511	MAIN CAM GEAR	
6	VDG1512	IDLER GEAR	
7	VDG1512	IDLER GEAR	
8	VDG1514	CHANGE GEAR	
9	VDR0372	REEL TABLE	
10	VDR0372	REEL TABLE	
11	VDV0391	CAPSTAN BELT	
12	VMB3550	CHANGING GEAR SPRING	
14	VMD4252	OPENER PIECE	
15	VMD4253	LED PRISM	
17	VML3624	MAIN LEVER	
18	VML3626	PINCH CHARGE ARM	
19	VML3632	IDLER ARM	
20	VMX3092	P4 CAP	
21	VDB1431	TENSION ARM BOSH	
22	VEM0797	LOADING MOTOR UNIT	
23	VXA7105	SUPPLY SHAFT HOLDER UNIT	

24	VXA7106	TAKE UP SHAFT HOLDER UNIT	
25	L1AE00000036	AC HEAD UNIT	
26	VXA7311	SECTOR GEAR UNIT	
27	VXL3107	SUPPLY LOADING ARM UNIT	
28	VXL3108	TAKE UP LOADING ARM UNIT	
29	VXL3109	PINCH ARM UNIT	
30	VXL3110	P5 ARM UNIT	
31	VXL3111	TENSION ARM UNIT	
32	VMB3547	TENSION SPRING	
33	VXL3252	SUPPLY BRAKE ARM UNIT	
34	VXL3113	TAKE UP BRAKE ARM UNIT	
35	VMB3548	TAKE UP BRAKE SPRING	
36	VXL3124	CHANGING LEVER UNIT	
37	VXL3131	CLEANER ARM UNIT	
39	VXP2133	CENTER CLUTH UNIT	
40	VXP2168	TORQUE CLUTCH UNIT	
41	VMD4983	FLAT CABLE HOLDER	
50	VMA0L25	TOP PLATE	
51	VMD4255	SIDE PLATE (L)	
52	VMD4254	SIDE PLATE (R)	
53	VML3706	OPENER LEVER	
54	VXA7110	CASSETTE HOLDER UNIT	
55	VXL3160	MAIN SHAFT UNIT	
B1	VHD1044	SCREW	
B2	XYN3+C4FJ	SCREW	
B3	XTN26+7JFJ	SCREW	
B4	XTN26+7JFJ	SCREW	
B5	XTN26+7JFJ	SCREW	
B6	XTV26+5FFJ	SCREW	
B7	XTV26+5FFJ	SCREW	
B8	XTV26+8FFJ	SCREW	
B9	XTV26+8FFJ	SCREW	
B10	VHD1066	SCREW	
B11	VHD1066	SCREW	

B12	VHD1185	SCREW	
B13	VHD1095	SCREW	
B14	VHD1117	SCREW	
B15	VHD1117	SCREW	
W1	VMX2208	WASHER	
W2	VMX3196	WASHER	
W3	VMX2699	WASHER	
W4	VMX3196	WASHER	

TOP PREVIOUS NEXT

19.2 DVD MECHANISM PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

Note:

*All parts except parts mentioned [PAVC-SPC] in the Remarks column are supplied by PAVCSG.

Parts mentioned [PAVC-SPC] are supplied by PAVC-SPC.

Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
101	RXQ1241T	TRV MOTOR UNIT	[PAVC-SPC]
102	RMR1323-K3	MIDDLE CHASSIS	
103	RMS0712-1	FIXED PIN	
104	RMS0712-1	FIXED PIN	
105	RMN0771	FFC HOLDER	
108	RMG0545-K	FLOATING RUBBER	
109	RMG0545-K	FLOATING RUBBER	
110	RMG0545-K	FLOATING RUBBER	
111	RMG0545-K	FLOATING RUBBER	
112	RDG0499	TRV GEAR(A)	
113	RMC0415	ADJUST SP. HOLDER(A)	
114	RMC0415	ADJUST SP. HOLDER(A)	
115	RMC0415	ADJUST SP. HOLDER(A)	
116	RMEC0320	ADJUST SPRING	
117	RMEC0320	ADJUST SPRING	
118	RMEC0320	ADJUST SPRING	
119	RMM0260	TRV DRIVE RACK	
120	RMSC0710	DRIVE SHAFT	
121	RMSC0711	GUIDE SHAFT	
122	REZ1615	MOTOR DRIVE FFC 6P	
124	RDG0500	TRV GEAR(B)	

125	RDG0501	TRV GEAR(C)	
126	RMEC0319	TRV GEAR SPRING	
128	RGQ0280-K4	TRAY	
129	RXQ0748	MECHA CHASSIS UNIT	
130	JSMC0048	MAGNET HOLDER	
131	RMR1445-K	CLAMP PLATE	
132	RMR1447-X	MAGNET HOLDER	
134	RMR1446-X	CLAMPER	
135	RSH1A049-U	OPEN SW	
138	RAF3112A-C	OPU(7.1H)	⚠
139	REZ1616-2	INTERFACE FFC 26P	
141	RMG0561-T	CUSHION RUBBER	
143	RQLCA0141	LASER CAUTION LABEL	⚠
B101	XTW3+12S	SCREW	
B102	RHD17036	SCREW	
B103	RHD17036	SCREW	
B105	VHD1224-C	SCREW	
B106	VHD1224-C	SCREW	
B107	VHD1224-C	SCREW	
B109	RHD14112	SCREW	
W101	XWG6FFY	WASHER	

TOP PREVIOUS NEXT

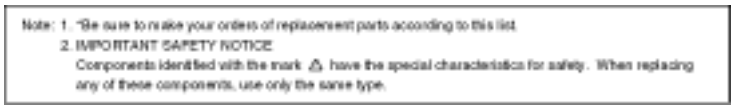
19.3 CASING PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

Note:

*All parts except parts mentioned [PAVC-SPC] in the Remarks column are supplied by PAVCSG.

Parts mentioned [PAVC-SPC] are supplied by PAVC-SPC.


Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
201	VGM2051	TOP PANEL	⚠
202	RMKV0006	CHASSIS FRAME	
203	RMPV0001	BACK PANEL	
204	RYPV0057	FRONT PANEL U	
205	RKFV0018	DOOR	
206	RKFV0020	BLINDER PANEL	
207	VMB2521	BLINDER SPRING	
208	REXDV0001	WIRE CABLE (2P)	
209	RMN0091	SPACER	
210	VMP7768	FRONT ANGLE	
211	RGKV0052	TRAY ORNAMENT	
212	VMC1887	EARTH SPRING	
213	RMZV0005	BARRIER (DVD)	
214	VKC0295	SPACER	
215	RMN0091	SPACER	
216	VMX3277	SPACER	
220	VMX3115	MECHA SPACER (F)	
221	VMX3229	MECHA SPACER (R)	
222	VMX3230	DVD SPACER (L)	
223	VMX3231	DVD SPACER (R)	
224	VKA0364	FOOT	

225	VKA0364	FOOT	
226	RMZV0025	BARRIER (FRAME)	
230	VWJ1678	FLAT CARD CABLE (7P)	P2501 - CYLINDER
231	VWJ1605	FLAT CARD CABLE (6P)	P4002 - AC HEAD
238	VMX3402	PCB SPACER	
B201	VHD1094	SCREW TOP	
B202	VHD1094	SCREW TOP	
B203	VHD0690	SCREW (REAR P)	
B204	VHD0690	SCREW (REAR P)	
B205	XTBS26+8J	SCREW	
B206	XTBS26+8J	SCREW	
B207	XTBS26+8J	SCREW	
B208	XTBS26+8J	SCREW	
B209	XSN3+4FZ	SCREW (TUNER)	
B210	VHD0690	SCREW (REAR P)	
B211	VHD0690	SCREW (REAR P)	
B212	VHD0690	SCREW (REAR P)	
B213	VHD0690	SCREW (REAR P)	
B214	VHD0690	SCREW (REAR P)	
B215	RHD30090	SCREW (PCB)	
B216	RHD30090	SCREW (PCB)	
B217	RHD30090	SCREW (PCB)	
B218	RHD30090	SCREW (PCB)	
B219	RHD30090	SCREW (PCB)	
B220	RHD30090	SCREW (PCB)	
B221	RHD30090	SCREW (PCB)	
B222	VHD1633	SCREW (DL1)	
B223	VHD1633	SCREW (DL1)	
B224	VHD1633	SCREW (DL1)	
B225	VHD1633	SCREW (DL1)	
B227	XTV26+5FR	SCREW	
B228	XTW3+10PR	SCREW (MECHA)	
B229	VHD1452-1	SCREW(L)	
B230	VHD1453-1	SCREW(S)	

B231	VHD1453-1	SCREW(S)	
B232	VHD1453-1	SCREW(S)	
B234	XTBS26+8J	SCREW	
B235	XTBS26+8J	SCREW	

TOP PREVIOUS NEXT

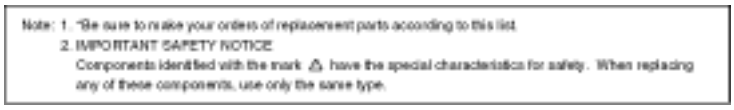
19.4 PACKING PARTS SECTION PARTS LIST

TOP PREVIOUS NEXT

Note:

*All parts except parts mentioned [PAVC-SPC] in the Remarks column are supplied by PAVCSG

Parts mentioned [PAVC-SPC] are supplied by PAVC-SPC.


Note: 1. "Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
301	RQTV0052	O/I BOOK (ENG/ARAB)	⚠ NV-VP32GC/GCS
301	RQTV0049	O/I BOOK (ENG)	⚠ NV-VP32GL
302	EUR7720X40	REMOTE CONTROL	
303	UR77EC2003A	BATTERY COVER	
305	RJA0019-2X	AC CORD	⚠ NV-VP32GC/GCS
305	K2CJ2DA00008	AC CORD	⚠ NV-VP32GL
306	VJA1124	RF CABLE	
307	K2KA6BA00003	PHONE CABLE	
308	RJA0053-3X	AC CORD	⚠ NV-VP32GC
310	RPKV0001	ACCESSORY BOX	
311	VPN6084	CUSIHON [L]	
312	VPN6085	CUSHION (R)	
315	RPGV0147	PACKING CASE	NV-VP32GC
315	RPGV0148	PACKING CASE	NV-VP32GCS
315	RPGV0145	PACKING CASE	NV-VP32GL
		SERVICE FIXTURES & TOOLS	
	VFJ8125H3F	VHS ALIGNMENT TAPE (PAL)	[AVC-SPC]
	VFK0335	RETAINING RING REMOVER (3mm/4mm)	[AVC-SPC]
	VFK0329	POST ADJUSTMENT SCREWDRIVER	[AVC-SPC]
	VFK0326	HEX WRENCH SET	[AVC-SPC]

	VFK0132	BACK TENSION METER	[AVC-SPC]
	VFK27	HEAD CLEANING STICK	[AVC-SPC]
	VFK1024	MOLYTONE GREASE	[AVC-SPC]
	VFK0330	FINE ADJUSTMENT GEAR DRIVER	[AVC-SPC]
	VFK1301	SILICONE GREASE	[AVC-SPC]
	VFK1298A	FLOIL GREASE	[AVC-SPC]
	VFKZ0171	EXTENSION CABLE(15P)	[AVC-SPC]
	VFKZ0170	EXTENSION CABLE(19P)	[AVC-SPC]
	VFK1730	EXTENSION CABLE(11P)	[AVC-SPC]

TOP PREVIOUS NEXT

19.5 ELECTRICAL PARTS LIST

TOP PREVIOUS NEXT

Note1:

All parts except parts mentioned [PAVC-SPC] in the Remarks column are supplied by PAVCSG.

Parts mentioned [PAVC-SPC] are supplied by PAVC-SPC.

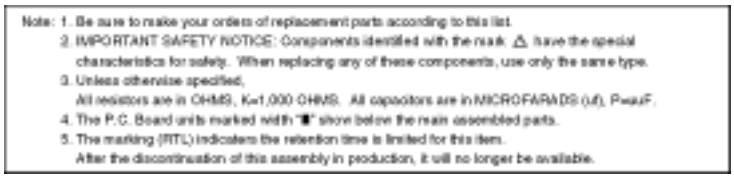
Note2:

"*1", "2", "3" in the Remarks column shows the models as follow.

"*1" : NV-VP32GC-S

"*2" : NV-VP32GCS-S

"*3" : NV-VP32GL-S


Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE: Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS (uf), P=uuF.
4. The P.C. Board units marked width "■" show below the main assembled parts.
5. The marking (RTL) indicates the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Remarks
	VEPV0008E	MAIN C.B.A.	(RTL) *1
	VEPV0008F	MAIN C.B.A.	(RTL) *2
	VEPV0008C	MAIN C.B.A.	(RTL) *3
	VEPV0012B	POWER C.B.A	(RTL) *1,*2
	VEPV0012A	POWER C.B.A	(RTL) *3
	VEPV0010A	FRONT JACK C.B.A	(RTL)
	VEPV0011A	FRONT SW C.B.A	(RTL)

	REPV0030B	DVD MODULE C.B.A	*1,*3
	REPV0030C	DVD MODULE C.B.A	*2
	REP3606A-C	MOTOR C.B.A.	(RTL)
	VEPV0008E	MAIN C.B.A.	(RTL) *1
	VEPV0008F	MAIN C.B.A.	(RTL) *2
	VEPV0008C	MAIN C.B.A.	(RTL) *3
B7751	N4BCT50A0005	BATTERY (LEAD FREE)	
C1295	ECA1CHJ221B	E-CAP	
C1341	F1H1H103A220	CHIP CAPASITOR	
C1342	ECEA1EKA4R7B	ELECTROLYTIC CAPACITOR	
C1351	F1H1H103A220	CHIP CAPASITOR	
C1352	ECEA1AKA470B	ELECTROLYTIC CAPACITOR	
C2001	ECJ1VC1H330J	CHIP CAPACITOR	
C2003	ECJ1VF1A105Z	CHIP CAPACITOR	
C2051	ECEA0JKN220B	E-CAP	
C2053	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C2054	F1H1H392A013	CHIP CAPACITOR	
C2055	F1H1C104A008	CHIP CAPASITOR	
C2099	ECJ1VC1H681J	CHIP CAPACITOR	
C2501	F1H1C104A008	CHIP CAPASITOR	
C2502	ECEA0JKA221B	ELECTROLYTIC CAPACITOR	
C2504	F1H1E223A002	CHIP CAPACITOR	
C2505	F1H1E223A002	CHIP CAPACITOR	
C2506	ECJ1VB1A224K	CHIP CAPACITOR	
C2507	F1H1H102A219	CHIP CAPASITOR	
C2508	ECJ1VB1H182K	CHIP CAPACITOR	
C2509	ECEA1CKA220B	ELECTROLYTIC CAPACITOR	
C2510	ECJ1VB1C104K	CHIP CAPACITOR	
C2511	ECJ1VB1C104K	CHIP CAPACITOR	
C2512	ECJ1VB1C104K	CHIP CAPACITOR	
C2513	ECJ1VF1A105Z	CHIP CAPACITOR	
C2515	F1H1H103A220	CHIP CAPASITOR	
C2518	F1H1H102A219	CHIP CAPASITOR	
C2519	F1H1H103A220	CHIP CAPASITOR	

C2520	ECJ1VB1C104K	CHIP CAPACITOR	
C2551	ECJ1VB1C563K	CHIP CAPACITOR	
C2552	ECJ1VB1C563K	CHIP CAPACITOR	
C2561	ECJ1VB1C563K	CHIP CAPACITOR	
C2562	ECJ1VB1C563K	CHIP CAPACITOR	
C2571	ECA1EM221B	E-CAP	
C3002	ECJ1VB1C104K	CHIP CAPACITOR	
C3003	ECJ1VB1C104K	CHIP CAPACITOR	
C3004	ECJ1VC1H151J	CHIP CAPACITOR	
C3005	ECJ1VB1C104K	CHIP CAPACITOR	
C3006	ECJ1VB0J105K	CHIP CAPACITOR	
C3007	ECJ1VC1H390J	CHIP CAP	
C3008	ECEA1HKA4R7B	ELECTROLYTIC CAPACITOR	
C3009	ECJ1VB0J105K	CHIP CAPACITOR	
C3010	ECJ1VB0J105K	CHIP CAPACITOR	
C3011	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C3012	ECJ1VB1C104K	CHIP CAPACITOR	
C3013	ECJ1VB1C104K	CHIP CAPACITOR	
C3015	ECJ1VB1C104K	CHIP CAPACITOR	
C3016	ECJ1VB0J105K	CHIP CAPACITOR	
C3017	ECJ1VB1C104K	CHIP CAPACITOR	
C3019	ECJ1VB1C104K	CHIP CAPACITOR	
C3020	ECEA1HKA3R3B	ELECTROLYTIC CAPACITOR	
C3021	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C3022	F1H1H103A219	CAPACITOR	
C3025	ECJ1VC1H331J	CHIP CAPACITOR	
C3027	ECJ2VB1C104K	CHIP CAPACITOR	
C3028	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C3029	F1H1H103A220	CHIP CAPASITOR	
C3030	F1H1H103A220	CHIP CAPASITOR	
C3031	ECJ1VB1C104K	CHIP CAPACITOR	
C3033	ECJ1VB0J105K	CHIP CAPACITOR	
C3034	ECJ1VC1H030C	CHIP CAPACITOR	
C3035	ECJ1VB1C104K	CHIP CAPACITOR	
C3036	ECEA1HKA3R3B	ELECTROLYTIC CAPACITOR	
C3037	ECEA1HKA2R2B	ELECTROLYTIC CAPACITOR	
C3038	ECJ1VB1H472K	CHIP CAPACITOR	
C3039	F1H1C3330001	CAPACITOR	
C3040	ECJ1VB1A474K	CHIP CAPACITOR	

C3041	F1H1E223A002	CHIP CAPACITOR	
C3042	ECEA1HKA4R7B	ELECTROLYTIC CAPACITOR	
C3046	ECJ1VB0J105K	CHIP CAPACITOR	*1,*2
C3047	F1H1C104A008	CHIP CAPASITOR	
C3052	ECJ1VB1C104K	CHIP CAPACITOR	
C3053	ECJ1VB1C104K	CHIP CAPACITOR	
C3062	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C3064	ECJ1VB0J105K	CHIP CAPACITOR	
C3065	ECJ1VB1C104K	CHIP CAPACITOR	
C33001	F1H1H103A220	CHIP CAPASITOR	
C33014	ECA0JM221B	E-CAP	
C33501	ECA0JM221B	E-CAP	
C33502	F1H1H103A220	CHIP CAPASITOR	
C33503	F1H1H103A220	CHIP CAPASITOR	
C33504	F1H1H103A219	CAPACITOR	
C33505	ECJ1VB1C104K	CHIP CAPACITOR	
C33506	ECJ1VB1C104K	CHIP CAPACITOR	
C33507	ECJ1VB0J105K	CHIP CAPACITOR	
C33508	ECJ1VB0J105K	CHIP CAPACITOR	
C33509	ECA0JM102B	ELECTROLYTIC CAPACITOR	
C33510	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	
C33511	ECA0JM102B	ELECTROLYTIC CAPACITOR	
C33512	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	
C33513	ECA0JM102B	ELECTROLYTIC CAPACITOR	
C33514	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	
C33515	ECA0JM331B	E-CAP	
C33516	F1H1H103A219	CAPACITOR	
C33517	ECA0JM331B	E-CAP	
C33522	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C33531	F1H1H103A219	CAPACITOR	
C34010	ECA0JM221B	E-CAP	
C34302	ECEA1CKS470B	E-CAP	
C34303	ECEA1CKS470B	E-CAP	
C34304	ERJ3GEY0R00V	CHIP JUMPER	
C34305	ECJ1VC1H470J	CHIP CAPACITOR	
C34306	ECJ1VC1H471J	CHIP CAPACITOR	
C34307	F1H1C104A008	CHIP CAPASITOR	
C34308	ECJ1VC1H470J	CHIP CAPACITOR	
C34309	ECJ1VC1H471J	CHIP CAPACITOR	

C34310	ECEA1CKA101B	ELECTROLYTIC CAPACITOR	
C34311	ECEA1AKA101B	ELECTROLYTIC CAPACITOR	
C34402	F1H1C104A008	CHIP CAPASITOR	
C34405	F1H1H102A219	CHIP CAPASITOR	
C34414	ECEA1CKS470B	E-CAP	
C34415	ECEA1CKS470B	E-CAP	
C34427	F1H1H102A219	CHIP CAPASITOR	
C36001	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C36003	F1H1C104A008	CHIP CAPASITOR	
C36004	ECJ1VF1H104Z	CHIP CAPACITOR	
C36006	ECEA1VKA100B	ELECTROLYTIC CAPACITOR	
C36021	F1H1C104A008	CHIP CAPASITOR	
C36033	ECJ1VC1H221J	CHIP CAPACITOR	
C36034	ECJ1VC1H221J	CHIP CAPACITOR	
C36035	ECJ1VC1H221J	CHIP CAPACITOR	
C36036	ECJ1VC1H221J	CHIP CAPACITOR	
C36055	F1H1H103A220	CHIP CAPASITOR	
C36301	F1H1H103A220	CHIP CAPASITOR	
C36302	ECEA1AKA470B	ELECTROLYTIC CAPACITOR	
C3711	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	
C3712	ECJ1VB1C104K	CHIP CAPACITOR	
C3713	ECJ1VB0J105K	CHIP CAPACITOR	
C3714	ECJ1VB0J105K	CHIP CAPACITOR	
C3715	ECA0JM471B	E-CAP	
C4010	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4018	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C4041	ECEA1HKA4R7B	ELECTROLYTIC CAPACITOR	
C4042	ECEA1HKA4R7B	ELECTROLYTIC CAPACITOR	
C4061	ECJ1VB1H682K	CHIP CAPACITOR	
C4062	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C4063	ECEA1HKA3R3B	ELECTROLYTIC CAPACITOR	
C4064	ECJ1VB1H182K	CHIP CAPACITOR	
C4065	ECJ1VB1H182K	CHIP CAPACITOR	
C4066	F1H1H222A013	CHIP CAPACITOR	
C4081	ECQB1H223JM3	POLYESTER CAPACITOR	
C4082	ECJ1VB1H471K	CHIP CAPACITOR	
C4083	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C4084	ECJ1VB1H182K	CHIP CAPACITOR	
C4085	F1H1E223A002	CHIP CAPACITOR	

C4303	ECEA1HKAR22B	ELECTROLYTIC CAPACITOR	
C4304	ECEA1HKAR22B	ELECTROLYTIC CAPACITOR	
C4502	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4503	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4504	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4505	ECEA0JKA330B	E-CAP	
C4506	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4507	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C4508	F1H1C3330001	CAPACITOR	
C4509	F1H1H103A220	CHIP CAPASITOR	
C4510	F1H1H103A220	CHIP CAPASITOR	
C4511	ECJ1VB1C104K	CHIP CAPACITOR	
C4512	ECJ1VB1A224K	CHIP CAPACITOR	
C4513	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C4514	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4515	ECEA0JKA330B	E-CAP	
C4516	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4517	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C4519	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4520	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4521	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4522	ECEA0JKA220B	ELECTROLYTIC CAPACITOR	
C4524	ECJ1VB1C104K	CHIP CAPACITOR	
C4525	ECEA1CKA220B	ELECTROLYTIC CAPACITOR	
C4527	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4530	ECJ1VC1H151J	CHIP CAPACITOR	
C4531	ECJ1VC1H151J	CHIP CAPACITOR	
C4534	ECQB1H153JF3	POLYPROPYLEN CAPACITOR	
C4535	ECQB1H153JF3	POLYPROPYLEN CAPACITOR	
C4536	F1H1H103A220	CHIP CAPASITOR	
C4537	ECJ2VC1H560G	CHIP CAPACITOR	
C4538	F1H1H103A220	CHIP CAPASITOR	
C4581	ECQB1H473JM3	POLYESTER CAPACITOR	
C4582	ECQB1H473JM3	POLYESTER CAPACITOR	
C4601	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	
C4603	F1H1H152A219	CHIP CAPACITOR	
C5001	F1H1H103A219	CAPACITOR	
C5002	F1H1H103A219	CAPACITOR	
C5003	F1H1H103A219	CAPACITOR	

C5004	F1H1H103A219	CAPACITOR	
C5005	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	
C5006	ECJ1VB1C104K	CHIP CAPACITOR	
C6001	ECJ1VC1H180J	CHIP CAPACITOR	
C6002	ECJ1VC1H220J	CHIP CAPACITOR	
C6003	ECJ1VC1H220J	CHIP CAPACITOR	
C6004	ECJ1VC1H180J	CHIP CAPACITOR	
C6005	ECEA1HKA3R3B	ELECTROLYTIC CAPACITOR	
C6006	ECJ1VC1H101J	CHIP CAPACITOR	
C6007	ECJ1VC1H820J	CHIP CAP	
C6008	ECJ1VC1H471J	CHIP CAPACITOR	
C6009	F1H1H103A220	CHIP CAPASITOR	
C6010	F1H1H103A220	CHIP CAPASITOR	
C6011	F1H1H103A220	CHIP CAPASITOR	
C6013	ECJ1VF1A105Z	CHIP CAPACITOR	
C6014	F1H1H102A219	CHIP CAPASITOR	
C6015	F1H1C3330001	CAPACITOR	
C6016	F1H1H102A219	CHIP CAPASITOR	
C6017	ECJ1VC1H471J	CHIP CAPACITOR	
C6020	F1H1H102A219	CHIP CAPASITOR	
C6021	F1H1H103A220	CHIP CAPASITOR	
C6022	ECJ2VF1H103Z	CHIP CAPACITOR	
C6101	F1J1H104A578	CHIP CAPACITOR	
C6102	F1H1H103A220	CHIP CAPASITOR	
C6103	F1H1H103A220	CHIP CAPASITOR	
C6111	F1H1C104A008	CHIP CAPASITOR	
C6112	ECJ1VC1H330J	CHIP CAPACITOR	
C6113	ECJ1VC1H330J	CHIP CAPACITOR	
C6301	F1H1H103A220	CHIP CAPASITOR	
C6302	F1H1H103A220	CHIP CAPASITOR	
C6303	ECEA1AKA470B	ELECTROLYTIC CAPACITOR	
C6307	F1H1H103A220	CHIP CAPASITOR	
C6308	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C6309	ECEA1AKA470B	ELECTROLYTIC CAPACITOR	
C6310	F1H1H103A220	CHIP CAPASITOR	
C7301	F1H1H103A730	CHIP CAPASITOR	*3
C7303	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	*3
C7304	F1H1C104A008	CHIP CAPASITOR	*3
C7305	ECEA0JKA101B	ELECTROLYTIC CAPACITOR	*3

C7312	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	*3
C7313	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	*3
C7315	F1H1A4740009	CHIP CAPASITOR	*3
C7316	ECJ1VB1H472K	CHIP CAPASITOR	*3
C7317	ECEA1CKA470B	ELECTROLYTIC CAPACITOR	*3
C7318	ECEA1CKA100B	ELECTROLYTIC CAPACITOR	*3
C7319	ECJ1VB1H152K	CHIP CAPASITOR	*3
C7320	ECJ1VB1H152K	CHIP CAPASITOR	*3
C7321	ECJ1VB1H152K	CHIP CAPASITOR	*3
C7324	F1H1H103A219	CAPASITOR	*3
C7325	F1H1H103A219	CAPASITOR	*3
C7326	F1H1A4740009	CHIP CAPASITOR	*3
C7327	ECJ1VB1E123K	CHIP CAPASITOR	*3
C7328	ECJ1VC1H681J	CHIP CAPASITOR	*3
C7329	ERJ3GEY0R00V	CHIP JUMPER	*3
C7330	ECJ1VC1H681J	CHIP CAPASITOR	*3
C7331	ECJ1VB1E123K	CHIP CAPASITOR	*3
C7333	F1H1A4740009	CHIP CAPASITOR	*3
C7335	F1H1C104A008	CHIP CAPASITOR	*3
C7336	F1H1C104A041	CAPASITOR	*3
C7337	F1H1A4740009	CHIP CAPASITOR	*3
C7338	F1H1A4740009	CHIP CAPASITOR	*3
C7552	F1H1C104A008	CHIP CAPASITOR	
C7601	ECEA1HKA010B	ELECTROLYTIC CAPACITOR	
C7603	F1H1H103A220	CHIP CAPASITOR	
C7605	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C7608	F1H1H103A220	CHIP CAPASITOR	
C7610	F1H1H102A219	CHIP CAPASITOR	
C7616	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C7618	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C7619	F1H1H103A220	CHIP CAPASITOR	
C7621	ECJ1VB1H471K	CHIP CAPACITOR	
C7622	ECJ1VB1H471K	CHIP CAPACITOR	
C7709	ECJ1VB1H182K	CHIP CAPACITOR	
C7714	ECJ1VC1H101J	CHIP CAPACITOR	*1,*2
C7752	ECEA0JKA331Q	ELECTROLYTIC CAPACITOR	
D1341	MAZ4130NLF	DIODE	
D1351	MAZ4056NHF	DIODE	

D1501	B3EA00000072	PHOTO DIODE	
D2001	MA2C165001VT	DIODE	
D2002	MA2C165001VT	DIODE	
D2503	MAZ4160NMF	DIODE	
D33001	MAZ4056NHF	DIODE	
D36002	MAZ4200NMF	DIODE	
D36301	MAZ4056NHF	DIODE	
D4501	MA2C165001VT	DIODE	
D6302	B0JACE000001	DIODE	
D6305	MAZ4062NLF	DIODE	
D6306	MAZ4056NHF	DIODE	
D6307	MAZ4056NHF	DIODE	
D7602	MAZ4300NMF	DIODE	
D7751	B0JACE000001	DIODE	
D7752	MA2C700A0F	DIODE	
D7753	MA2C165001VT	DIODE	
D7754	B0JACE000001	DIODE	
DP37501	A2BB00000136	FL UNIT	
IC1290	C0CBCHG00003	REGULATOR IC	
IC1511	B3NAA0000049	REEL SENSOR	
IC1512	B3NAA0000049	REEL SENSOR	
IC2501	C1AB00001767	CYL DRIVE IC	
IC2502	C0DBZJG00005	REGULATOR IC	
IC3001	C1AB00001836	AV CHIP IC	
IC33501	AN13330A-VF	75 OHM DRIVER IC	
IC34301	C0ABBB000108	OP-AMP IC	
IC36001	MN101C35DPK	OPECON	
IC36002	C0EBE0000198	RESET IC	
IC3701	C1AB00001935	VIDEO IC	
IC4501	AN3656NFBPBV	HI FI IC	
IC6001	C2CBHF000346	U-CON IC	*1,*2
IC6001	C2CBHF000349	U-CON IC	*3
IC6201	C0EBH0000172	RESET IC	
IC6301	C0DBCHD00002	REGULATOR IC	
IC7301	C0ZBZ0000580	IC	*3
IC7552	PNA4618M09VT	IR RECEIVER	

J1	VEE0X50	EARTH WIRE	
JK33001	K2HA306B0071	I/O JACK	
JK34301	K2HA612B0052	6 PIN AV + CPN RCA JACK	
JK34302	K1CB105B0042	S-JACK	
K3004	ERJ3GEY0R00V	CHIP JUMPER	*1,*2
K3014	ERJ3GEY0R00V	CHIP JUMPER	
K36001	ERJ3GEY0R00V	CHIP JUMPER	
K36305	ERJ3GEY0R00V	CHIP JUMPER	
K4591	ERJ3GEY0R00V	CHIP JUMPER	*1,*2
K4592	ERJ3GEY0R00V	CHIP JUMPER	*1,*2
K6012	ERJ3GEY0R00V	CHIP JUMPER	*3
K6015	F1H1H103A220	CHIP CAPASITOR	
K7302	ERJ3GEY0R00V	CHIP JUMPER	*3
K7306	ERJ3GEY0R00V	CHIP JUMPER	*3
K7616	ERJ3GEY0R00V	CHIP JUMPER	
L3001	G0C271JA0019	CHOKE COIL	
L3004	G1C120J00001	CHIP COIL	
L3301	G0C270JA0019	COIL	
L3302	G0C680JA0019	COIL	
L3303	G0C270JA0019	COIL	
L33501	G0C220JA0019	COIL	
L34001	G0C101JA0019	RF CHOKE COIL	
L4081	G0C471KA0004	COIL	
L4501	G0C1R2J00004	COIL	
L4502	G0C391JA0019	COIL	
L5001	G0C680JA0019	COIL	
L6001	G0C5R6JA0019	COIL	
L7601	G0C100JA0030	INDUCTOR	
L7605	G0C100JA0030	INDUCTOR	
L7608	G0C270JA0030	COIL	
L7609	G0C100JA0030	INDUCTOR	
L7702	G0C100JA0019	COIL	*1,*2
LB33001	J0JCC0000188	CHIP COIL	
LB33002	J0JBC0000015	CHIP INDUCTOR	
LB33003	J0JBC0000015	CHIP INDUCTOR	

LB33004	J0JBC0000015	CHIP INDUCTOR	
LB33010	J0JCC0000188	CHIP COIL	
LB33011	J0JCC0000188	CHIP COIL	
LB33012	J0JCC0000188	CHIP COIL	
LB33013	J0JCC0000188	CHIP COIL	
LB33371	ERJ3GEY0R00V	CHIP JUMPER	
LB33372	ERJ3GEY0R00V	CHIP JUMPER	
LB33373	ERJ3GEY0R00V	CHIP JUMPER	
LB33374	ERJ3GEY0R00V	CHIP JUMPER	
LB33375	ERJ3GEY0R00V	CHIP JUMPER	
LB33376	ERJ3GEY0R00V	CHIP JUMPER	
LB34306	ERJ3GEY0R00V	CHIP JUMPER	
LB34307	ERJ3GEY0R00V	CHIP JUMPER	
LB34308	ERJ3GEY0R00V	CHIP JUMPER	
LB34309	ERJ3GEY0R00V	CHIP JUMPER	
LB34371	ERJ3GEY0R00V	CHIP JUMPER	
LB34372	ERJ3GEY0R00V	CHIP JUMPER	
LB4403	ERJ6GEY0R00V	CHIP JUMPER	
LB4404	ERJ6GEY0R00V	CHIP JUMPER	
LB4405	ERJ6GEY0R00V	CHIP JUMPER	
LB4406	ERJ6GEY0R00V	CHIP JUMPER	
LB7601	J0JBC0000015	CHIP INDUCTOR	
LB7602	ERJ3GEY0R00V	CHIP JUMPER	
LB7605	ERJ3GEY0R00V	CHIP JUMPER	
P1531	K1KA02A00375	LOADING MOTOR WIRE CONNECTOR	
P2501	K1MN07A00020	CONNECTOR	
P2571	K1KA08A00290	CONNECTOR	
P31001	K1KB15A00028	CONNECTOR	
P34301	K1KA19A00007	CONNECTOR	
P4001	K1MZ02A00003	CONNECTOR	
P4002	K1MN06A00034	6 PIN CONNECTOR	
P5001	K1MN09A00029	9 PIN CONNECTOR	
PP6101	K1KA02A00010	CONNECTOR	
PS33001	K1KB10A00065	10P B/B CONNECTOR	
PS7502	K1KB06A00051	ANT TERMINAL	

Q1341	B1AAGD000006	TRANSISTOR	
Q1342	2SD0601A0L	CHIP TRANSISTOR	
Q1351	B1AAGD000006	TRANSISTOR	
Q1352	B1AAGD000006	TRANSISTOR	
Q1354	B1AAGD000006	TRANSISTOR	
Q1501	PNA2604M01VT	PHOTO TRANSISTOR	
Q1502	PNA2604M01VT	PHOTO TRANSISTOR	
Q3001	2SD1819A0L	CHIP TRANSISTOR	
Q3003	2SD1819A0L	CHIP TRANSISTOR	
Q33001	B1AAGD000006	TRANSISTOR	
Q34302	2SD0601A0L	CHIP TRANSISTOR	
Q36330	B1AAGD000006	TRANSISTOR	
Q4081	2SD0602ARL	CHIP TRANSISTOR	
Q4082	2SD114900L	CHIP TRANSISTOR	
Q4083	2SD0601A0L	CHIP TRANSISTOR	
Q4084	2SB0710A0L	CHIP TRANSISTOR SI 220MH 0.4W	
Q6305	2SD0601A0L	CHIP TRANSISTOR	
Q6306	2SD0601A0L	CHIP TRANSISTOR	
Q6307	B1AAGD000006	TRANSISTOR	
Q7701	2SB0709A0L	TRANSISTOR	*1,*2
QR1342	B1GDCFLL0027	DIGITAL TRANSISTOR	
QR3001	B1GBCFNN0016	DIGITAL TRANSISTOR	
QR34303	B1GBCFJJ0044	DIGITAL TRANSISTOR	
QR34304	B1GDCFJJ0040	DIGITAL TRANSISTOR	
QR34410	B1GBCFJA0020	DIGITAL TRANSISTOR	
QR34419	B1GBCFJA0020	DIGITAL TRANSISTOR	
QR36302	B1GBCFLL0032	DIGITAL TRANSISTOR	
QR36303	B1GBCFLL0032	DIGITAL TRANSISTOR	
QR36304	B1GBCFLL0032	DIGITAL TRANSISTOR	
QR36305	B1GBCFLL0032	DIGITAL TRANSISTOR	
QR36306	B1GBCFLL0032	DIGITAL TRANSISTOR	
QR36307	B1GBCFLL0032	DIGITAL TRANSISTOR	
QR4061	B1GBCFJJ0044	DIGITAL TRANSISTOR	
QR4081	B1GDCFJJ0040	DIGITAL TRANSISTOR	
QR4082	B1GBCFNN0016	DIGITAL TRANSISTOR	
QR4401	B1GBCFGA0019	DIGITAL TRANSISTOR	
QR4404	B1GDBFNN0001	DIGITAL TRANSISTOR	
QR4405	B1GBCFGA0019	DIGITAL TRANSISTOR	

QR4406	B1GBCFGA0019	DIGITAL TRANSISTOR	
QR4651	B1GBCFGA0019	DIGITAL TRANSISTOR	
R1341	ERDS2TJ103T	CARBON RESISTOR	
R1342	D0GB104JA007	CHIP RESISTOR	
R1351	ERDS2TJ471T	CARBON RESISTOR	
R1501	D0GB273JA007	CHIP RESISTOR	
R1502	D0GB273JA007	CHIP RESISTOR	
R1503	ERDS2TJ151T	CARBON RESISTOR	
R1511	D0GB273JA007	CHIP RESISTOR	
R1512	D0GB273JA007	CHIP RESISTOR	
R1513	ERJ6GEYJ121V	CHIP RESISTOR	
R2001	D0GB392JA041	CHIP RESISTOR	
R2002	ERJ3GEYJ105V	CHIP RESISTOR	
R2099	ERJ3GEYJ682V	CHIP RESISTOR	
R2501	ERJ6GEYJ1R2V	CHIP RESISTOR	
R2503	ERJ6GEYJ1R5V	CHIP RESISTOR	
R2514	D0GB221JA041	CHIP RESISTOR	
R2515	D0GB221JA041	CHIP RESISTOR	
R2516	D0GB221JA041	CHIP RESISTOR	
R2519	ERJ6GEYJ822V	CHIP RESISTOR	
R2520	D0GB183JA007	CHIP RESISTOR	
R2521	ERJ3GEYJ102V	CHIP RESISTOR	
R2522	ERJ3GEYJ101V	CHIP RESISTOR	
R2523	ERJ3GEYJ101V	CHIP RESISTOR	
R2551	ERJ3GEYJ103V	CHIP RESISTOR	
R2552	ERJ3GEYJ103V	CHIP RESISTOR	
R2561	ERJ3GEYJ102V	CHIP RESISTOR	
R2562	D0GB473JA041	CHIP RESISTOR	
R2563	ERJ3GEYJ102V	CHIP RESISTOR	
R3001	ERJ3GEYJ622V	CHIP RESISTOR	
R3002	ERJ3GEYJ822V	CHIP RESISTOR	
R3003	D0GB152JA007	CHIP RESISTOR	
R3004	ERJ3GEYJ682V	CHIP RESISTOR	
R3005	D0GB472JA041	CHIP RESISTOR	
R3011	D0GB332JA007	CHIP RESISTOR	
R3012	ERJ3GEYJ681V	CHIP RESISTOR	
R3013	D0GB273JA007	CHIP RESISTOR	
R3018	D0GB153JA007	CHIP RESISTOR	

R3020	D0GB152JA007	CHIP RESISTOR	
R3021	D0GB331JA007	CHIP RESISTOR	
R3024	ERJ3GEYJ102V	CHIP RESISTOR	
R3025	D0GB332JA007	CHIP RESISTOR	
R3026	D0GB332JA007	CHIP RESISTOR	
R3032	ERJ3GEYJ685V	CHIP RESISTOR	
R3033	D0GB335JA040	CHIP RESISTOR	
R3038	D0GB221JA041	CHIP RESISTOR	*3
R3041	ERJ3GEY0R00V	CHIP JUMPER	
R3042	D0GB473JA041	CHIP RESISTOR	
R3043	D0GB221JA041	CHIP RESISTOR	
R3044	D0GB221JA041	CHIP RESISTOR	
R33001	ERDS2TJ271T	CARBON RESISTOR	
R33004	D0GB221JA041	CHIP RESISTOR	
R33005	D0GB221JA041	CHIP RESISTOR	
R33371	ERJ3GEYF750V	CHIP RESISTOR	
R33372	ERJ3GEYF750V	CHIP RESISTOR	
R33373	ERJ3GEYF750V	CHIP RESISTOR	
R33374	ERJ3GEYF750V	CHIP RESISTOR	
R33375	ERJ3GEYF750V	CHIP RESISTOR	
R33376	ERJ3GEYF750V	CHIP RESISTOR	
R33501	ERJ3GEYJ103V	CHIP RESISTOR	
R33502	ERJ3GEYJ103V	CHIP RESISTOR	
R33511	ERJ3GEYJ103V	CHIP RESISTOR	
R34302	D0GB123JA007	CHIP RESISTOR	
R34304	D0GB123JA007	CHIP RESISTOR	
R34305	ERJ3GEYJ622V	CHIP RESISTOR	
R34307	ERJ3GEYJ622V	CHIP RESISTOR	
R34309	ERJ3GEYJ103V	CHIP RESISTOR	
R34310	ERJ3GEYJ103V	CHIP RESISTOR	
R34371	D0HB221ZA002	CHIP RESISTOR	
R34372	D0HB221ZA002	CHIP RESISTOR	
R34401	ERJ3GEYJ103V	CHIP RESISTOR	
R34403	ERJ3GEYJ102V	CHIP RESISTOR	
R34422	D0GB473JA041	CHIP RESISTOR	
R34423	D0GB473JA041	CHIP RESISTOR	
R34428	D0HB821ZA002	CHIP RESISTOR	
R34429	D0HB821ZA002	CHIP RESISTOR	
R36006	D0GB473JA041	CHIP RESISTOR	

R36007	D0GB473JA041	CHIP RESISTOR	
R36008	D0GB473JA041	CHIP RESISTOR	
R36010	ERDS2TJ681T	CARBON RESISTOR	
R36011	ERDS2TJ681T	CARBON RESISTOR	
R36013	D0GB473JA041	CHIP RESISTOR	
R36014	D0GB473JA041	CHIP RESISTOR	
R36021	D0GB563JA007	CHIP RESISTOR	
R36022	D0GB683JA007	CHIP RESISTOR	
R36033	ERJ3GEY0R00V	CHIP JUMPER	
R36057	D0GB473JA041	CHIP RESISTOR	
R36058	D0GB473JA041	CHIP RESISTOR	
R36059	ERJ3GEYJ103V	CHIP RESISTOR	
R36061	D0GB153JA007	CHIP RESISTOR	
R36105	D0GB473JA041	CHIP RESISTOR	
R36106	D0GB473JA041	CHIP RESISTOR	
R36107	D0GB473JA041	CHIP RESISTOR	
R36108	D0GB473JA041	CHIP RESISTOR	
R36109	D0GB473JA041	CHIP RESISTOR	
R36110	D0GB473JA041	CHIP RESISTOR	
R36111	D0GB473JA041	CHIP RESISTOR	
R36112	D0GB473JA041	CHIP RESISTOR	
R36113	D0GB473JA041	CHIP RESISTOR	
R36114	D0GB473JA041	CHIP RESISTOR	
R36115	D0GB473JA041	CHIP RESISTOR	
R36116	D0GB473JA041	CHIP RESISTOR	
R36117	D0GB473JA041	CHIP RESISTOR	
R36118	D0GB473JA041	CHIP RESISTOR	
R36119	D0GB473JA041	CHIP RESISTOR	
R36120	D0GB473JA041	CHIP RESISTOR	
R36121	D0GB473JA041	CHIP RESISTOR	
R36122	D0GB473JA041	CHIP RESISTOR	
R36123	D0GB473JA041	CHIP RESISTOR	
R36124	D0GB473JA041	CHIP RESISTOR	
R36125	ERDS2TJ270T	CARBON RESISTOR	
R36126	ERDS2TJ270T	CARBON RESISTOR	
R36302	D0GB473JA041	CHIP RESISTOR	
R36303	D0GB473JA041	CHIP RESISTOR	
R36304	D0GB473JA041	CHIP RESISTOR	
R36305	D0GB473JA041	CHIP RESISTOR	

R36306	D0GB473JA041	CHIP RESISTOR	
R36307	D0AE472JA048	RESISTOR	
R3703	ERJ3GEYJ105V	CHIP RESISTOR	
R3711	ERJ3GEYJ750V	CHIP RESISTOR	
R3712	ERJ3GEYJ750V	CHIP RESISTOR	
R4002	ERJ3GEYJ103V	CHIP RESISTOR	
R4011	D0GB472JA041	CHIP RESISTOR	
R4012	D0GB153JA007	CHIP RESISTOR	
R4015	D0GB203JA007	CHIP RESISTOR	
R4016	D0GB473JA041	CHIP RESISTOR	
R4017	D0GB563JA007	CHIP RESISTOR	
R4061	D0GB474JA041	CHIP RESISTOR	
R4062	D0GB153JA007	CHIP RESISTOR	
R4063	D0GB331JA007	CHIP RESISTOR	
R4071	D0GB153JA007	CHIP RESISTOR	
R4081	ERJ3GEYJ103V	CHIP RESISTOR	
R4082	D0GB332JA007	CHIP RESISTOR	
R4084	ERJ3GEYJ102V	CHIP RESISTOR	
R4085	ERJ3GEYJ102V	CHIP RESISTOR	
R4086	D0GB222JA041	CHIP RESISTOR	
R4087	D0GB222JA041	CHIP RESISTOR	
R4088	ERJ6GEY0R00V	CHIP JUMPER	
R4301	D0GB683JA007	CHIP RESISTOR	
R4302	D0GB683JA007	CHIP RESISTOR	
R4303	D0GB472JA041	CHIP RESISTOR	
R4304	D0GB472JA041	CHIP RESISTOR	
R4403	D0GB471JA041	CHIP RESISTOR	
R4404	D0GB471JA041	CHIP RESISTOR	
R4405	ERJ3GEY0R00V	CHIP JUMPER	
R4406	ERJ3GEY0R00V	CHIP JUMPER	
R4424	D0GB471JA041	CHIP RESISTOR	
R4425	D0GB471JA041	CHIP RESISTOR	
R4500	ERJ3GEYJ102V	CHIP RESISTOR	
R4501	ERJ3GEYJ513V	CHIP RESISTOR	
R4502	ERJ3GEYJ513V	CHIP RESISTOR	
R4503	ERJ3GEYJ513V	CHIP RESISTOR	
R4505	D0GB392JA041	CHIP RESISTOR	
R4506	D0GB392JA041	CHIP RESISTOR	
R4507	ERJ3GEYJ513V	CHIP RESISTOR	

R4508	D0GB392JA041	CHIP RESISTOR	
R4509	ERJ3GEYJ513V	CHIP RESISTOR	
R4510	D0GB392JA041	CHIP RESISTOR	
R4511	ERJ3GEYJ513V	CHIP RESISTOR	
R4512	D0GB392JA041	CHIP RESISTOR	
R4513	D0GB222JA041	CHIP RESISTOR	
R4515	D0GB392JA041	CHIP RESISTOR	
R4525	ERJ3GEYJ102V	CHIP RESISTOR	
R4527	ERJ3GEYJ681V	CHIP RESISTOR	
R4530	D0GB472JA041	CHIP RESISTOR	
R4532	D0GB472JA041	CHIP RESISTOR	
R4534	D0GB124JA007	CHIP RESISTOR	
R4538	D0GB333JA007	CHIP RESISTOR	
R4539	D0GB331JA007	CHIP RESISTOR	
R4540	D0GB331JA007	CHIP RESISTOR	
R4581	D0GB333JA007	CHIP RESISTOR	
R4582	D0GB333JA007	CHIP RESISTOR	
R4583	D0GB563JA007	CHIP RESISTOR	
R4584	D0GB563JA007	CHIP RESISTOR	
R4585	ERJ3GEYJ511V	CHIP RESISTOR	
R4586	ERJ3GEYJ511V	CHIP RESISTOR	
R4601	D0GB393JA041	CHIP RESISTOR	
R4602	ERJ3GEYJ682V	CHIP RESISTOR	
R4651	ERJ3GEYJ681V	CHIP RESISTOR	
R6001	ERJ3GEYJ102V	CHIP RESISTOR	
R6002	D0GB222JA041	CHIP RESISTOR	
R6003	ERJ3GEY0R00V	CHIP JUMPER	
R6004	D0GB221JA041	CHIP RESISTOR	
R6005	ERJ3GEYJ103V	CHIP RESISTOR	
R6006	D0GB183JA007	CHIP RESISTOR	
R6007	D0GB183JA007	CHIP RESISTOR	
R6009	ERJ3GEYJ103V	CHIP RESISTOR	
R6010	ERJ3GEYJ103V	CHIP RESISTOR	
R6011	D0GB183JA007	CHIP RESISTOR	
R6012	ERJ3GEYJ561V	CHIP RESISTOR	
R6013	ERJ3GEYJ105V	CHIP RESISTOR	
R6015	ERJ3GEY0R00V	CHIP JUMPER	
R6016	ERJ3GEYG103V	CHIP RESISTOR	
R6017	D0GB222JA041	CHIP RESISTOR	

R6019	ERJ3GEYJ103V	CHIP RESISTOR	*2,*3
R6020	D0GB183JA007	CHIP RESISTOR	
R6021	D0GB183JA007	CHIP RESISTOR	
R6022	ERJ3GEYJ102V	CHIP RESISTOR	
R6023	ERJ3GEYJ103V	CHIP RESISTOR	*1
R6026	D0GB332JA007	CHIP RESISTOR	
R6028	ERJ3GEYJ103V	CHIP RESISTOR	
R6029	ERJ3GEYJ103V	CHIP RESISTOR	
R6031	D0GB471JA041	CHIP RESISTOR	
R6032	D0GB471JA041	CHIP RESISTOR	
R6102	D0GB222JA041	CHIP RESISTOR	
R6104	D0GB221JA041	CHIP RESISTOR	
R6105	D0GB221JA041	CHIP RESISTOR	
R6106	D0GB221JA041	CHIP RESISTOR	
R6107	D0GB221JA041	CHIP RESISTOR	
R6201	D0GB332JA007	CHIP RESISTOR	
R6307	ERJ6GEYJ472V	CHIP RESISTOR	
R6309	ERDS2TJ821T	CARBON RESISTOR	
R6310	D0GB182JA007	CHIP RESISTOR	
R6400	ERJ3GEYJ101V	CHIP RESISTOR	
R6401	ERJ3GEYJ101V	CHIP RESISTOR	
R7305	ERJ3GEYJ101V	CHIP RESISTOR	*3
R7306	D0GB392JA041	CHIP RESISTOR	*3
R7307	D0GB472JA041	CHIP RESISTOR	*3
R7308	ERJ3GEYJ752V	CHIP RESISTOR	*3
R7310	D0GB221JA041	CHIP RESISTOR	*3
R7312	ERJ3GEYG682V	CHIP RESISTOR	*3
R7313	ERJ3GEYG682V	CHIP RESISTOR	*3
R7314	ERJ3GEYG682V	CHIP RESISTOR	*3
R7315	ERJ3GEYG432V	CHIP RESISTOR	*3
R7316	ERJ3GEYG332V	CHIP RESISTOR	*3
R7317	ERJ3GEYG432V	CHIP RESISTOR	*3
R7318	ERJ3GEYG332V	CHIP RESISTOR	*3
R7319	ERJ3GEYG432V	CHIP RESISTOR	*3
R7320	ERJ3GEYG332V	CHIP RESISTOR	*3
R7321	D0GB562JA008	RESISTOR	*3
R7323	ERJ3GEYJ912V	CHIP RESISTOR	*3
R7324	ERJ3GEYJ101V	CHIP RESISTOR	*3
R7325	ERJ3GEYJ101V	CHIP RESISTOR	*3

R7552	D0GB221JA041	CHIP RESISTOR	
R7571	D0GB273JA007	CHIP RESISTOR	
R7601	D0AE331JA048	CARBON RESISTOR	
R7606	J0JCC0000124	CHIP COIL	
R7607	J0JCC0000124	CHIP COIL	
R7611	D0AE331JA048	CARBON RESISTOR	
R7612	ERJ3GEY0R00V	CHIP JUMPER	
R7613	ERJ3GEY0R00V	CHIP JUMPER	
R7706	ERJ3GEYJ101V	CHIP RESISTOR	*1,*2
R7707	ERJ3GEYJ102V	CHIP RESISTOR	*1,*2
R7751	ERJ3GEYJ102V	CHIP RESISTOR	
S1531	K0C111A00006	TAB SWITCH	
S1532	K0ZZ00000598	MODE SWITCH	
T4081	G2A352C00002	IF TRANSFORMER	
TU7601	ENG57818G1	TUNER	*1,*2
TU7601	ENG57820G1	TUNER	*3
W700	ERJ3GEY0R00V	CHIP JUMPER	
W701	ERJ3GEY0R00V	CHIP JUMPER	
W702	ERJ3GEY0R00V	CHIP JUMPER	
W703	ERJ3GEY0R00V	CHIP JUMPER	
W704	ERJ3GEY0R00V	CHIP JUMPER	
W705	ERJ3GEY0R00V	CHIP JUMPER	
W706	ERJ3GEY0R00V	CHIP JUMPER	
W707	ERJ3GEY0R00V	CHIP JUMPER	
W708	ERJ3GEY0R00V	CHIP JUMPER	
W709	ERJ3GEY0R00V	CHIP JUMPER	
W710	ERJ3GEY0R00V	CHIP JUMPER	
W711	ERJ3GEY0R00V	CHIP JUMPER	
W712	ERJ3GEY0R00V	CHIP JUMPER	
W713	ERJ3GEY0R00V	CHIP JUMPER	
W714	ERJ3GEY0R00V	CHIP JUMPER	
W715	ERJ3GEY0R00V	CHIP JUMPER	
W716	ERJ3GEY0R00V	CHIP JUMPER	
W717	ERJ3GEY0R00V	CHIP JUMPER	
W718	ERJ3GEY0R00V	CHIP JUMPER	

W719	ERJ3GEY0R00V	CHIP JUMPER	
W720	ERJ3GEY0R00V	CHIP JUMPER	
W721	ERJ3GEY0R00V	CHIP JUMPER	
W722	ERJ3GEY0R00V	CHIP JUMPER	
W723	ERJ3GEY0R00V	CHIP JUMPER	
W725	ERJ3GEY0R00V	CHIP JUMPER	
W726	ERJ3GEY0R00V	CHIP JUMPER	
W727	ERJ3GEY0R00V	CHIP JUMPER	
W728	ERJ3GEY0R00V	CHIP JUMPER	
W729	ERJ3GEY0R00V	CHIP JUMPER	
W730	ERJ3GEY0R00V	CHIP JUMPER	
W731	ERJ3GEY0R00V	CHIP JUMPER	
W732	ERJ3GEY0R00V	CHIP JUMPER	
W733	ERJ3GEY0R00V	CHIP JUMPER	
W734	ERJ3GEY0R00V	CHIP JUMPER	
W735	ERJ3GEY0R00V	CHIP JUMPER	
W736	ERJ3GEY0R00V	CHIP JUMPER	
X3001	H0D357400067	CRYSTAL OSCILLATOR	
X3002	H0D443400040	CRYSTAL OSCILLATOR	
X36001	H2D800400009	CRYSTAL OSCILLATOR	
X6001	H0D120500009	CRYSTAL OSCILLATOR	
X6002	H0A327200064	CRYSTAL OSCILLATOR	
X7301	H0H400400006	CRYSTAL OSCILLATOR	*3
	MISCELLANEOUS		
	RJFV0004	FL HOLDER	
	VMD4258	PHOTO TRANSISTOR HOLDER	
	VMD4258	PHOTO TRANSISTOR HOLDER	
	VEPV0012B	POWER C.B.A	(RTL) *1,*2
	VEPV0012A	POWER C.B.A	(RTL) *3
C1120	ECQU2A223MLC	FILM CAPACITOR	
C1122	F1BAF331A013	CERAMIC CAP	⚠
C1124	F1BAF1020020	CERAMIC CAPACITOR	⚠
C1125	ECQU2A683MLC	E-CAP	⚠
C1141	ECEC2GG680FZ	E-CAP	*1,*2

C1142	EEUEB2G330E	E-CAP	*3
C1151	ECQB1H223JF3	POLYPROPYLEN CAPACITOR	
C1152	ECQB1H103JF3	POLYESTER CAPACITOR	
C1153	ECQV1H104JL3	FILM CAPACITOR	
C1154	ECQB1H223JF3	POLYPROPYLEN CAPACITOR	
C1155	ECKN3A271KBP	CAPACITOR	
C1200	ECQV1H104JL3	FILM CAPACITOR	
C1210	ECKW3A332KBS	CERAMIC CAPACITOR	
C1230	F2A1H2200032	E-CAP	
C1240	F2A1A1020056	E-CAP	
C1241	F2A1A2210063	E-CAP	
C1250	F2A1E8210009	E-CAP	
C1251	F2A1E1010067	E-CAP	
C1260	F2A1A1020056	E-CAP	
C1261	ECA1AHJ331B	E-CAP	
C1262	F2A1A1020056	E-CAP	
C1270	F2A1H2200032	E-CAP	
C1280	F2A1C4710055	E CAP	
C1290	F2A1E4710061	E-CAP	
C1291	F2A1C1210012	E-CAP	
C1360	ECA0JM221B	E-CAP	
C1362	ECEA1CKA470B	ELECTROLYTIC CAPACITOR	
C1363	F1H1H103A219	CAPACITOR	
C1370	ECEA0JKA470B	ELECTROLYTIC CAPACITOR	
C1372	ECJ2VB1E104K	CHIP CAPACITOR	
C1401	ECEA1HKA4R7B	ELECTROLYTIC CAPACITOR	
D1110	ERZVA5V471	ZNR	⚠
D1140	B0KB00000013	BRIDGE DIODE	
D1152	MA2C18500E	DIODE	
D1155	MA2C165001VT	DIODE	
D1157	MAZ40360MF	ZENER DIODE	
D1180	MAZ751000C	DIODE	
D1210	B0HAGM000006	DIODE	
D1230	MA2C18500E	DIODE	
D1240	B0JAME000037	DIODE	
D1241	B0JAME000037	DIODE	
D1243	MA2C165001VT	DIODE	

D1250	B0JAMK000015	DIODE	
D1251	B0JAMK000015	DIODE	
D1260	B0JAPG000019	SHOTKEY DIODE	
D1270	MA2C18500E	DIODE	
D1280	B0JAME000037	DIODE	
D1290	B0JAMK000015	DIODE	
D1360	MAZ4056NHF	DIODE	
D1370	MAZ40390MF	DIODE	
F1101	K5D162BK0005	FUSE	⚠
IC1200	C0DAEMB00003	IC	
IC1401	K7AABB000001	OPTICAL TRANSMITTER	
IP1240	K5G252AA0003	FUSE PROTECTOR	⚠
IP1280	K5G252AA0003	FUSE PROTECTOR	⚠
L1120	G0B233D00002	LINE FILTER	⚠
L1121	G0B233D00002	LINE FILTER	⚠
L1240	G0A220G00018	COIL	
L1250	G0A220G00018	COIL	
L1260	G0A100H00014	COIL	
L1290	G0A220G00018	COIL	
L1401	G0C220JA0019	COIL	
LB1214	ERJ3GEY0R00V	CHIP JUMPER	
LB1218	ERJ3GEY0R00V	CHIP JUMPER	
LB1401	J0JBC0000011	CHIP COIL	
LR1150	J1ZZA0000004	RESONAN SNUBBER	
P1101	K2AA2B000004	AC INLET	⚠
P1102	K1KA11B00035	CONNECTOR	
P1103	K1KA15A00118	CONNECTOR	
Q1150	B1DEDR000003	TRANSISTOR	
Q1151	2SC3311ASA	TRANSISTOR	
Q1152	2SC3311ASA	TRANSISTOR	

Q1153	B1DEEQ000001	TRANSISTOR	
Q1200	B3PBA0000078	PHOTO COUPLER	⚠
Q1240	2SB14170PA	TRANSISTOR	
Q1241	2SD0601A0L	CHIP TRANSISTOR	
Q1242	2SD0601A0L	CHIP TRANSISTOR	
Q1341	2SD199600A	TRANSISTOR	
Q1360	B1AAGD000006	TRANSISTOR	
Q1370	2SD0601A0L	CHIP TRANSISTOR	
R1150	ERDS2TJ105T	CARBON RESISTOR	
R1153	ERG2SJ331E	METAL OXIDE RESISTOR	
R1154	ERDS2TJ105T	CARBON RESISTOR	
R1155	ERJ6GEYJ104V	CHIP RESISTOR	
R1156	ERJ6GEYJ330V	CHIP RESISTOR	
R1157	ERJ6GEYG562V	CHIP RESISTOR	
R1158	ERJ6GEYJ331V	CHIP RESISTOR	
R1159	ERJ6GEYJ3R3V	CHIP RESISTOR	
R1160	ERX1SJR22E	1W RESISTOR	
R1161	D0AE101JA048	CARBON RESISTOR	
R1162	ERDS2TJ102T	CARBON RESISTOR	
R1163	D0AE101JA048	CARBON RESISTOR	
R1200	ERJ6GEYG273V	CHIP RESISTOR	
R1201	ERJ6GEYG333V	CHIP RESISTOR	
R1202	ERJ6GEYG222V	CHIP RESISTOR	
R1203	ERJ6GEYG223V	CHIP RESISTOR	
R1204	ERJ6GEYJ123V	CHIP RESISTOR	
R1205	ERJ6GEYJ222V	CHIP RESISTOR	
R1206	ERJ6GEYJ271V	CHIP RESISTOR	
R1207	ERJ6GEYG183V	CHIP RESISTOR	
R1208	ERJ6GEYG563V	CHIP RESISTOR	
R1230	D0GB473JA041	CHIP RESISTOR	
R1240	ERJ6GEYJ392V	CHIP RESISTOR	
R1241	ERJ3GEYJ122V	CHIP RESISTOR	
R1242	ERJ6GEYJ121V	CHIP RESISTOR	
R1360	ERDS2TJ471T	CARBON RESISTOR	
R1370	ERJ3GEYJ101V	CHIP RESISTOR	
R1371	D0GB1R0JA007	CHIP RESISTOR	
R1372	ERJ3GEYJ101V	CHIP RESISTOR	

T1150	ETS29AS246NC	SW TRANSFORMER	⚠
ZA1103	EYF52BC	FUSE HOLDER	
ZA1104	EYF52BC	FUSE HOLDER	
	VEPV0010A	FRONT JACK C.B.A	(RTL)
JK4801	K2HA306A0032	I/O JACK	
LB4801	ERJ6GEY0R00V	CHIP JUMPER	
LB4802	ERJ6GEY0R00V	CHIP JUMPER	
PP4802	K1KA10C00008	CONNECTOR	
R4801	ERJ3GEY0R00V	CHIP JUMPER	
R4802	ERJ3GEY0R00V	CHIP JUMPER	
R4803	ERJ3GEYJ750V	CHIP RESISTOR	
R7561	D0GB182JA007	CHIP RESISTOR	
R7562	D0GB332JA007	CHIP RESISTOR	
R7563	D0GB472JA041	CHIP RESISTOR	
R7565	D0GB182JA007	CHIP RESISTOR	
R7566	D0GB332JA007	CHIP RESISTOR	
R7567	D0GB472JA041	CHIP RESISTOR	
R7568	ERJ3GEYJ682V	CHIP RESISTOR	
S7561	EVQ11L07B	TACK SWITCH	
S7562	EVQ11L07B	TACK SWITCH	
S7563	EVQ11L07B	TACK SWITCH	
S7564	EVQ11L07B	TACK SWITCH	
S7565	EVQ11L07B	TACK SWITCH	
S7566	EVQ11L07B	TACK SWITCH	
S7567	EVQ11L07B	TACK SWITCH	
S7568	EVQ11L07B	TACK SWITCH	
S7569	EVQ11L07B	TACK SWITCH	
W501	ERJ3GEY0R00V	CHIP JUMPER	
W502	ERJ3GEY0R00V	CHIP JUMPER	

	VEPV0011A	FRONT SW C.B.A	(RTL)
PP7581	K1KA06C00009	CONNECTOR	
R7581	D0GB182JA007	CHIP RESISTOR	
R7582	D0GB332JA007	CHIP RESISTOR	
R7583	D0GB472JA041	CHIP RESISTOR	
S7581	EVQ11L07B	TACK SWITCH	
S7582	EVQ11L07B	TACK SWITCH	
S7583	EVQ11L07B	TACK SWITCH	
S7584	EVQ11L07B	TACK SWITCH	
S7585	EVQ11L07B	TACK SWITCH	
	REPV0030B	DVD MODULE C.B.A	*1,*3
	REPV0030C	DVD MODULE C.B.A	*2
C8001	F1H1C104A008	CHIP CAPASITOR	
C8002	F1H1C104A008	CHIP CAPASITOR	
C8003	F1H1C104A008	CHIP CAPASITOR	
C8004	F1H1C104A008	CHIP CAPASITOR	
C8007	F1H1C104A008	CHIP CAPASITOR	
C8008	F1H1C104A008	CHIP CAPASITOR	
C8009	F1H1C104A008	CHIP CAPASITOR	
C8010	F1H1C104A008	CHIP CAPASITOR	
C8011	F1H1C104A008	CHIP CAPASITOR	
C8012	F1H1C104A008	CHIP CAPASITOR	
C8013	F1H1C104A008	CHIP CAPASITOR	
C8014	F1H1C104A008	CHIP CAPASITOR	
C8015	F1H1C104A008	CHIP CAPASITOR	
C8016	F1H1C104A008	CHIP CAPASITOR	
C8017	F1H1C104A008	CHIP CAPASITOR	
C8018	F1H1C104A008	CHIP CAPASITOR	
C8019	ECJ2FF1A106Z	CERAMIC CAPACITOR	
C8020	F1H1C104A008	CHIP CAPASITOR	
C8021	F1H1C104A008	CHIP CAPASITOR	
C8022	ECJ2FF1A106Z	CERAMIC CAPACITOR	
C8023	ECJ2FF1A106Z	CERAMIC CAPACITOR	
C8026	EEE0JA470WR	SMT ECAP	

C8027	EEE0JA470WR	SMT ECAP	
C8028	ECJ1VC1H101J	CHIP CAPACITOR	
C8029	ECJ1VB0J105K	CHIP CAPACITOR	
C8030	ECJ1VB0J105K	CHIP CAPACITOR	
C8032	ECJ1VB1C104K	CHIP CAPACITOR	
C8033	ECJ1VB0J105K	CHIP CAPACITOR	
C8034	ECJ1VB0J105K	CHIP CAPACITOR	
C8035	F1H1C104A008	CHIP CAPASITOR	
C8036	ECJ1VB1C104K	CHIP CAPACITOR	
C8037	ECJ1VB1C104K	CHIP CAPACITOR	
C8038	F1H1H222A013	CHIP CAPACITOR	
C8039	F1H1H222A013	CHIP CAPACITOR	
C8040	ECJ1VB0J105K	CHIP CAPACITOR	
C8041	ECJ1VB0J105K	CHIP CAPACITOR	
C8042	ECJ1VB0J105K	CHIP CAPACITOR	
C8043	ECJ1VB0J105K	CHIP CAPACITOR	
C8044	ECJ1VB0J105K	CHIP CAPACITOR	
C8045	ECJ1VB0J105K	CHIP CAPACITOR	
C8046	ECJ1VB0J105K	CHIP CAPACITOR	
C8047	ECJ1VB0J105K	CHIP CAPACITOR	
C8048	F1H1C104A008	CHIP CAPASITOR	
C8049	F1H1C104A008	CHIP CAPASITOR	
C8050	F1H1C104A008	CHIP CAPASITOR	
C8051	F1H1C104A008	CHIP CAPASITOR	
C8052	F1H1C104A008	CHIP CAPASITOR	
C8053	F1H1C104A008	CHIP CAPASITOR	
C8054	F1H1C104A008	CHIP CAPASITOR	
C8055	F1H1C104A008	CHIP CAPASITOR	
C8056	F1H1C104A008	CHIP CAPASITOR	
C8057	F1H1C104A008	CHIP CAPASITOR	
C8058	F1H1C104A008	CHIP CAPASITOR	
C8059	F1H1C104A008	CHIP CAPASITOR	
C8060	F1H1C104A008	CHIP CAPASITOR	
C8061	F1H1C104A008	CHIP CAPASITOR	
C8062	F1H1C104A008	CHIP CAPASITOR	
C8063	F1H1C104A008	CHIP CAPASITOR	
C8064	EEEFC1A101P	SMT ECAP	
C8065	EEE0JA471P	SMT ECAP	
C8066	EEE0JA471P	SMT ECAP	

C8067	EEE0JA221WP	SMT ECAP	
C8069	ECJ1VB1H183K	CHIP CAPACITOR	
C8070	F1H1C3330001	CAPACITOR	
C8071	ECJ1VB1H562K	CHIP CAPACITOR	
C8073	F1J1C105A091	CHIP CAPACITOR	
C8074	F1J1C105A091	CHIP CAPACITOR	
C8075	ECJ1VB1H472K	CHIP CAPACITOR	
C8077	ECJ1VC1H102J	CHIP CAPACITOR	
C8078	ECJ1VC1H102J	CHIP CAPACITOR	
C8079	ECJ1VC1H102J	CHIP CAPACITOR	
C8080	ECJ1VB1H152K	CHIP CAPACITOR	
C8082	ECJ1VC1H821J	CHIP CAP	
C8083	ECJ1VC1H050D	CHIP CAPACITOR	
C8085	ECJ1VC1H220J	CHIP CAPACITOR	
C8086	EEE0JA471P	SMT ECAP	
C8087	EEE0JA471P	SMT ECAP	
C8088	ECJ1VC1H102J	CHIP CAPACITOR	
C8089	ECJ1VB1H122K	CHIP CAPACITOR	
C8090	ECJ1VC1H221J	CHIP CAPACITOR	
C8091	ECJ1VC1H101J	CHIP CAPACITOR	
C8092	F1H1C104A008	CHIP CAPASITOR	
C8101	F1H1C104A008	CHIP CAPASITOR	
C8102	F1H1C104A008	CHIP CAPASITOR	
C8103	ECJ2FF1A106Z	CERAMIC CAPACITOR	
C8104	F1H1C104A008	CHIP CAPASITOR	
C8105	F1H1C104A008	CHIP CAPASITOR	
C8106	F1H1C104A008	CHIP CAPASITOR	
C8107	F1H1C104A008	CHIP CAPASITOR	
C8108	F1H1C104A008	CHIP CAPASITOR	
C8109	F1H1C104A008	CHIP CAPASITOR	
C8110	F1H1C104A008	CHIP CAPASITOR	
C8201	F1H1C104A008	CHIP CAPASITOR	
C8202	F1H1C104A008	CHIP CAPASITOR	
C8203	F1H1C104A008	CHIP CAPASITOR	
C8204	EEEFC1A221P	SMT ECAP	
C8205	F1H1C104A008	CHIP CAPASITOR	
C8206	F1H1C104A008	CHIP CAPASITOR	
C8207	F1H1C104A008	CHIP CAPASITOR	
C8208	EEE1CA470SP	SMT ECAP	

C8209	EEEFC1E470P	SMT ECAP	
C8210	F1H1C104A008	CHIP CAPASITOR	
C8211	ECJ1VB1C104K	CHIP CAPACITOR	
C8212	ECJ1VB1C104K	CHIP CAPACITOR	
C8302	F1H1C104A008	CHIP CAPASITOR	
C8310	F1H1C104A008	CHIP CAPASITOR	
C8312	ECJ1VB0J105K	CHIP CAPACITOR	
C8313	F1H1C104A008	CHIP CAPASITOR	
C8314	F1H1C104A008	CHIP CAPASITOR	
C8315	F1H1C104A008	CHIP CAPASITOR	
C8407	EEE0JA470WR	SMT ECAP	
C8409	F1H1C104A008	CHIP CAPASITOR	
C8410	F1H1C104A008	CHIP CAPASITOR	
C8411	EEE0JA471P	SMT ECAP	
C8412	ECJ1VC1H100D	CHIP CAPACITOR	
C8413	F1H1C104A008	CHIP CAPASITOR	
C8414	ECJ1VC1H100D	CHIP CAPACITOR	
C8419	ERJ3GEY0R00V	CHIP JUMPER	
D8001	MA2J72800L	CHIP DIODE	
D8002	MA2J11100L	DIODE	
IC8001	MN2DS0005VP	DV 2.0 LSI	
IC8002	C0EBE0000384	RESET IC	
IC8003	REPV0030B	DVD MODULE C.B.A	
IC8101	RFKFVP81P161	IC	*1,*3 [PAVC-SPC]
IC8101	RFKFVP81R160	IC	*2 [PAVC-SPC]
IC8102	C3ABPG000133	64 SDRAM	
IC8201	C0GBG0000048	DRIVER IC	
IC8402	C0FBBK000038	D/A CONVERTOR	
K8001	ERJ3GEY0R00V	CHIP JUMPER	
K8005	ERJ3GEY0R00V	CHIP JUMPER	
K8007	ERJ3GEY0R00V	CHIP JUMPER	
K8008	ERJ3GEY0R00V	CHIP JUMPER	
K8009	ERJ3GEY0R00V	CHIP JUMPER	
K8204	ERJ6GEY0R00V	CHIP JUMPER	
K8301	ERJ3GEY0R00V	CHIP JUMPER	
K8302	ERJ3GEY0R00V	CHIP JUMPER	

K8303	ERJ3GEY0R00V	CHIP JUMPER	
K8403	ERJ3GEY0R00V	CHIP JUMPER	
L8002	G1C100KA0019	CHIP INDUCTOR	
L8003	G1C100KA0019	CHIP INDUCTOR	
L8004	G1C100KA0019	CHIP INDUCTOR	
L8005	G1C100KA0019	CHIP INDUCTOR	
LB8001	J0JCC0000062	CHIP BEAD	
LB8002	J0JCC0000062	CHIP BEAD	
LB8003	J0JHC0000045	CHIP INDUCTOR	
LB8004	J0JHC0000045	CHIP INDUCTOR	
LB8005	ERJ3GEY0R00V	CHIP JUMPER	
LB8006	ERJ3GEY0R00V	CHIP JUMPER	
LB8007	ERJ3GEY0R00V	CHIP JUMPER	
LB8008	ERJ3GEY0R00V	CHIP JUMPER	
LB8011	ERJ3GEY0R00V	CHIP JUMPER	
LB8012	ERJ3GEY0R00V	CHIP JUMPER	
LB8013	ERJ3GEY0R00V	CHIP JUMPER	
LB8014	ERJ3GEY0R00V	CHIP JUMPER	
LB8015	J0JCC0000166	CHIP BEAD	
LB8016	J0JCC0000166	CHIP BEAD	
LB8017	J0JHC0000045	CHIP INDUCTOR	
LB8018	J0JHC0000045	CHIP INDUCTOR	
LB8101	J0JHC0000045	CHIP INDUCTOR	
LB8201	ERJ3GEY0R00V	CHIP JUMPER	
LB8301	ERJ3GEY0R00V	CHIP JUMPER	
LB8302	J0JBC0000015	CHIP INDUCTOR	
LB8303	J0JCC0000119	FERRITE BEAD	
LB8304	J0JBC0000015	CHIP INDUCTOR	
LB8305	J0JBC0000015	CHIP INDUCTOR	
LB8306	J0JBC0000015	CHIP INDUCTOR	
LB8401	ERJ3GEY0R00V	CHIP JUMPER	
LB8402	J0JBC0000013	CHIP BEAD	
LB8403	D0GB221JA041	CHIP RESISTOR	
LB8404	J0JBC0000011	CHIP COIL	
P8001	K1MN26A00061	CONNECTOR	
P8002	K1KB11B00015	CONNECTOR	

P8003	K1KB19A00008	CONNECTOR	
P8201	K1MN06A00022	CONNECTOR	
PS8003	K1MN10A00030	10P FLT CONNECTOR	
PS8004	K1MN08A00023	CONNECTOR	
Q8001	2SD1819A0L	CHIP TRANSISTOR	
Q8002	2SD1819A0L	CHIP TRANSISTOR	
Q8003	2SB1218A0L	TRANSISTOR	
Q8004	2SB1218A0L	TRANSISTOR	
QR8001	UNR212100L	CHIP TRANISTOR	
QR8002	UNR521100L	DIGE TRANSISTOR	
R8001	ERJ3GEY0R00V	CHIP JUMPER	
R8002	D0GB153JA007	CHIP RESISTOR	
R8003	ERJ3GEY0R00V	CHIP JUMPER	
R8004	ERJ3GEY0R00V	CHIP JUMPER	
R8005	ERJ3GEY0R00V	CHIP JUMPER	
R8006	ERJ3GEY0R00V	CHIP JUMPER	
R8007	D0GB152JA007	CHIP RESISTOR	
R8008	D0GB222JA041	CHIP RESISTOR	
R8009	ERJ3GEY0R00V	CHIP JUMPER	
R8010	ERJ3GEY0R00V	CHIP JUMPER	
R8011	ERJ3GEY0R00V	CHIP JUMPER	
R8012	ERJ3GEYJ560V	CHIP RESISTOR	
R8013	ERJ3GEYJ560V	CHIP RESISTOR	
R8014	ERJ3GEYJ560V	CHIP RESISTOR	
R8015	ERJ3GEYJ560V	CHIP RESISTOR	
R8016	ERJ3GEYJ560V	CHIP RESISTOR	
R8017	ERJ3GEYJ560V	CHIP RESISTOR	
R8018	ERJ3GEYJ560V	CHIP RESISTOR	
R8019	ERJ3GEYJ560V	CHIP RESISTOR	
R8020	ERJ3GEYJ560V	CHIP RESISTOR	
R8021	ERJ3GEYJ560V	CHIP RESISTOR	
R8022	D0GB220JA007	CHIP RESISTOR	
R8023	D0GB100JA007	CHIP RESISTOR	
R8024	ERJ3GEY0R00V	CHIP JUMPER	
R8025	ERJ3GEY0R00V	CHIP JUMPER	

R8032	D0GB473JA041	CHIP RESISTOR	
R8033	D0GB473JA041	CHIP RESISTOR	
R8034	D0GB473JA041	CHIP RESISTOR	
R8035	D0GB473JA041	CHIP RESISTOR	
R8040	D0GB220JA007	CHIP RESISTOR	
R8041	D0GB220JA007	CHIP RESISTOR	
R8042	D0GB153JA007	CHIP RESISTOR	
R8043	D0GB472JA041	CHIP RESISTOR	
R8044	D0GB472JA041	CHIP RESISTOR	
R8045	D0GB472JA041	CHIP RESISTOR	
R8046	D0GB472JA041	CHIP RESISTOR	
R8047	D0GB472JA041	CHIP RESISTOR	
R8048	D0GB472JA041	CHIP RESISTOR	
R8049	D0GB472JA041	CHIP RESISTOR	
R8050	ERJ3GEYJ101V	CHIP RESISTOR	
R8051	J0JCC0000119	FERRITE BEAD	
R8053	ERJ3GEYJ560V	CHIP RESISTOR	
R8054	ERJ3GEYJ560V	CHIP RESISTOR	
R8055	ERJ3GEYJ102V	CHIP RESISTOR	
R8056	ERJ3GEYJ102V	CHIP RESISTOR	
R8057	D0GB2R2A007	CHIP RESISTOR	
R8058	D0GB2R2A007	CHIP RESISTOR	
R8059	D0GB331JA007	CHIP RESISTOR	
R8060	D0GB331JA007	CHIP RESISTOR	
R8062	D0GB221JA041	CHIP RESISTOR	
R8063	D0GB221JA041	CHIP RESISTOR	
R8064	D0GB221JA041	CHIP RESISTOR	
R8065	D0GB222JA041	CHIP RESISTOR	
R8066	ERJ3GEY0R00V	CHIP JUMPER	
R8067	ERJ3GEYJ103V	CHIP RESISTOR	
R8068	D0GB473JA041	CHIP RESISTOR	
R8069	D0GB473JA041	CHIP RESISTOR	
R8070	ERJ3GEYJ103V	CHIP RESISTOR	
R8071	ERJ3GEYJ103V	CHIP RESISTOR	
R8074	D0GB470JA008	RESISTOR	
R8075	ERJ3GEYJ820V	CHIP RESISTOR	
R8076	ERJ3GEYJ820V	CHIP RESISTOR	
R8077	D0GB330JA007	CHIP RESISTOR	
R8078	ERJ3GEYJ822V	CHIP RESISTOR	

R8079	ERJ3GEYJ822V	CHIP RESISTOR	
R8080	ERJ3GEYJ105V	CHIP RESISTOR	
R8081	D0GB391JA041	CHIP RESISTOR	
R8082	ERJ3GEY0R00V	CHIP JUMPER	
R8086	ERJ3GEYJ103V	CHIP RESISTOR	
R8091	D0GB473JA041	CHIP RESISTOR	
R8092	ERJ3GEY0R00V	CHIP JUMPER	
R8093	ERJ3GEY0R00V	CHIP JUMPER	
R8094	ERJ3GEYJ510V	CHIP RESISTOR	
R8095	ERJ3GEYJ510V	CHIP RESISTOR	
R8101	D0GB470JA008	RESISTOR	
R8102	ERJ3GEYJ681V	CHIP RESISTOR	
R8103	ERJ3GEYJ681V	CHIP RESISTOR	
R8201	D0GB823JA007	CHIP RESISTOR	
R8202	D0GB823JA007	CHIP RESISTOR	
R8203	ERJ3GEY0R00V	CHIP JUMPER	
R8204	D0GB472JA041	CHIP RESISTOR	
R8205	D0GB472JA041	CHIP RESISTOR	
R8206	D0GB473JA041	CHIP RESISTOR	
R8207	D0GB473JA041	CHIP RESISTOR	
R8208	D0GB473JA041	CHIP RESISTOR	
R8209	D0GB473JA041	CHIP RESISTOR	
R8210	ERJ6GEYJ6R8V	CHIP RESISTOR	
R8211	D0GB272JA041	CHIP RESISTOR	
R8212	ERJ3RBD202V	CHIP RESISTOR	
R8214	D0GB472JA041	CHIP RESISTOR	
R8217	ERJ3GEY0R00V	CHIP JUMPER	
R8218	ERJ3GEY0R00V	CHIP JUMPER	
R8219	ERJ3GEYJ752V	CHIP RESISTOR	
R8220	ERJ3GEYJ752V	CHIP RESISTOR	
R8321	D0HB243ZA002	CHIP RESISTOR	
R8322	ERJ3RBD102V	CHIP RESISTOR	
R8323	D0HB242ZA002	CHIP RESISTOR	
R8324	D0HB161ZA002	CHIP RESISTOR	
R8325	ERJ3RED820V	CHIP RESISTOR	
R8326	ERJ3RED820V	CHIP RESISTOR	
R8327	D0HB161ZA002	CHIP RESISTOR	
R8328	D0HB161ZA002	CHIP RESISTOR	
R8329	ERJ3RED100V	CHIP RESISTOR	

R8330	ERJ3RED100V	CHIP RESISTOR	
R8331	ERJ3RED100V	CHIP RESISTOR	
R8332	ERJ3GEYJ6R8V	CHIP RESISTOR	
R8407	D0GB221JA041	CHIP RESISTOR	
R8413	ERJ3GEYJ101V	CHIP RESISTOR	
R8414	ERJ3GEYJ101V	CHIP RESISTOR	
R8415	ERJ3GEYJ101V	CHIP RESISTOR	
R8501	ERJ3GEY0R00V	CHIP JUMPER	
R8502	ERJ3GEY0R00V	CHIP JUMPER	
RX8001	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8002	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8003	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8004	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8005	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8006	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8007	D1H88204A024	PARALLEL CHIP RESISTOR	
RX8401	D1H88204A024	PARALLEL CHIP RESISTOR	
X8001	H0J270500064	CRYSTAL	
	REP3606A-C	MOTOR C.B.A.	(RTL)
C2601	F1E1H104A001	CAPACITOR	
C2602	F1E1H104A001	CAPACITOR	
SW2601	K0L1BB000026	TRV INNER SWITCH	

TOP PREVIOUS NEXT

20 Schematic Diagram for printing with A4 size

TOP PREVIOUS

TOP PREVIOUS

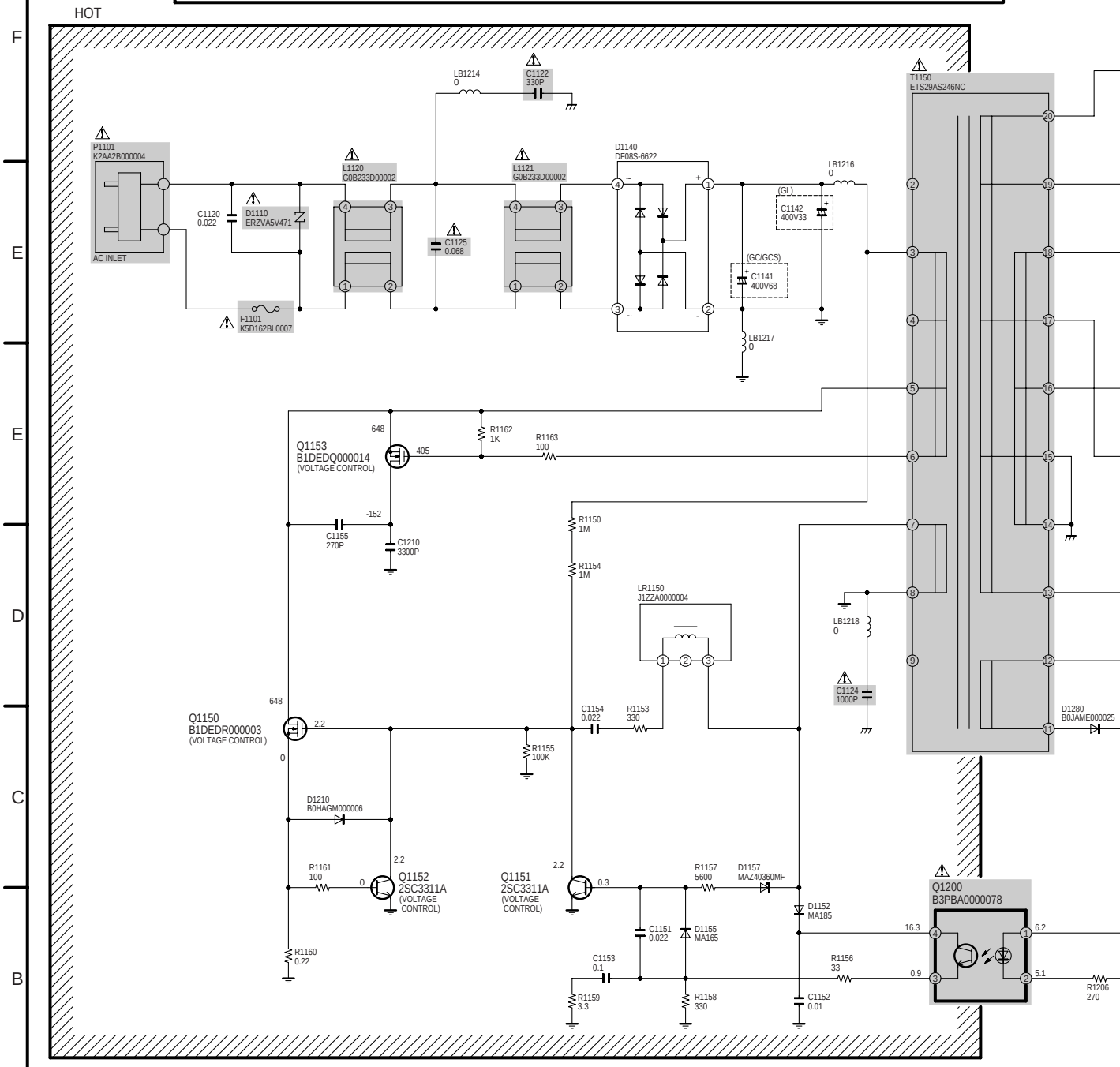
16 SCHEMATIC DIAGRAMS

16.1. POWER SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.

PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

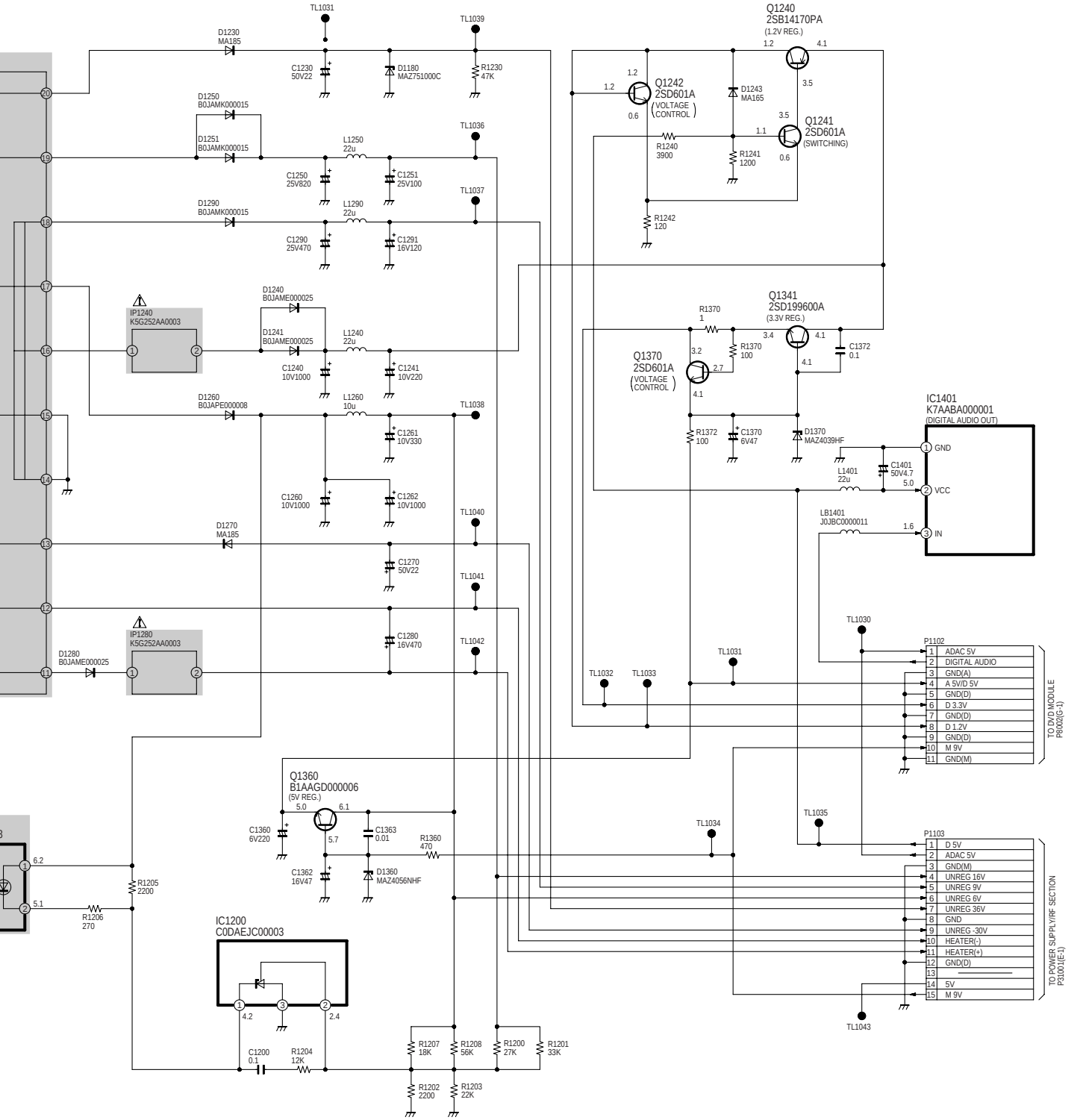


NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚

NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFER
WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING
TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRO



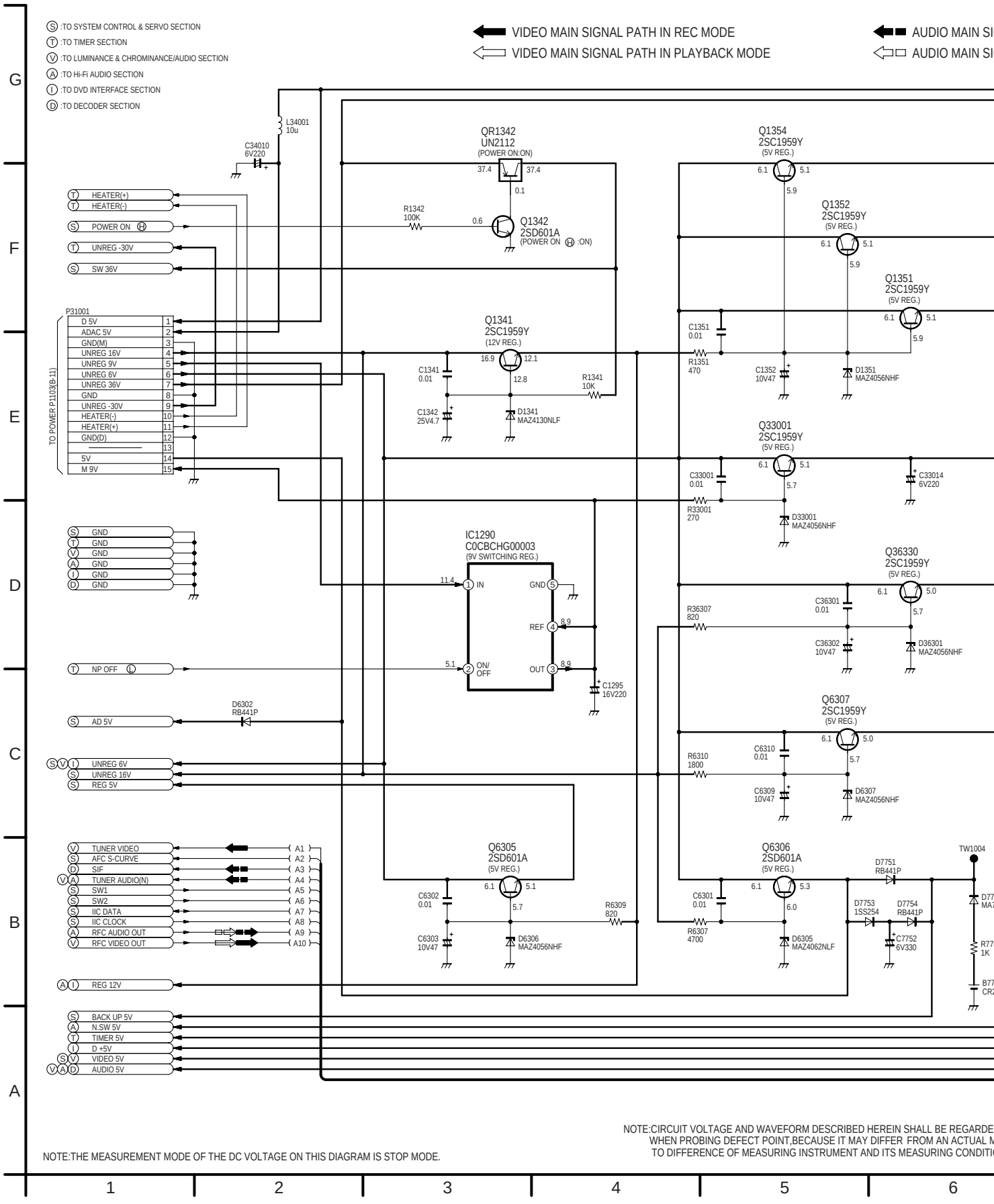
BE REGARDED AS REFERENCE INFORMATION
AN ACTUAL MEASURING VALUE DUE
RING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
POWER SCHEMATIC DIAGRAM

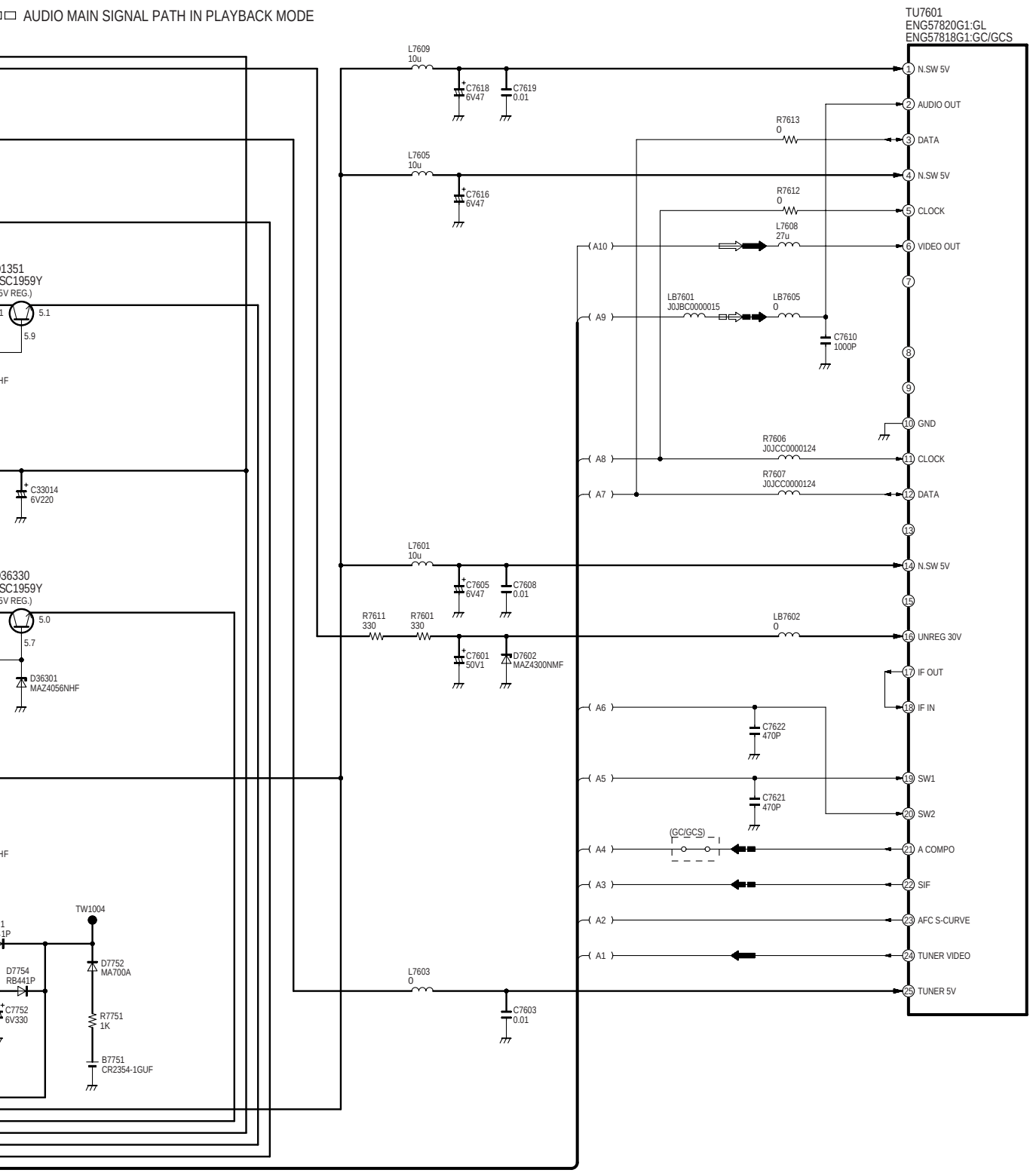
6 | 7 | 8 | 9 | 10 | 11 | 12

16.2. POWER SUPPLY/RF SECTION IN MAIN SCHEMATIC DIAGRAM



AUDIO MAIN SIGNAL PATH IN REC MODE

AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



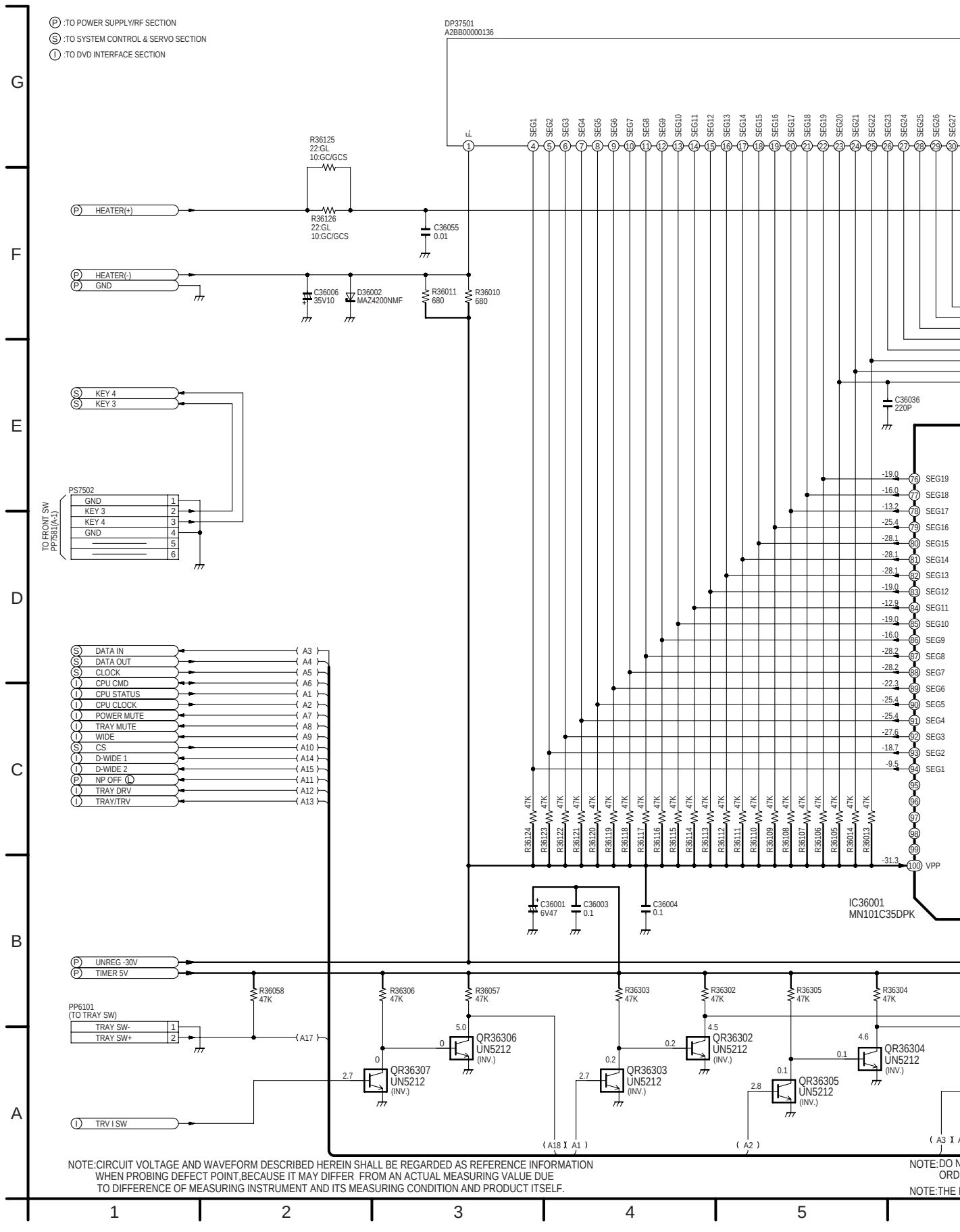
IN SHALL BE REGARDED AS REFERENCE INFORMATION
ER FROM AN ACTUAL MEASURING VALUE DUE
S MEASURING CONDITION AND PRODUCT ITSELF.

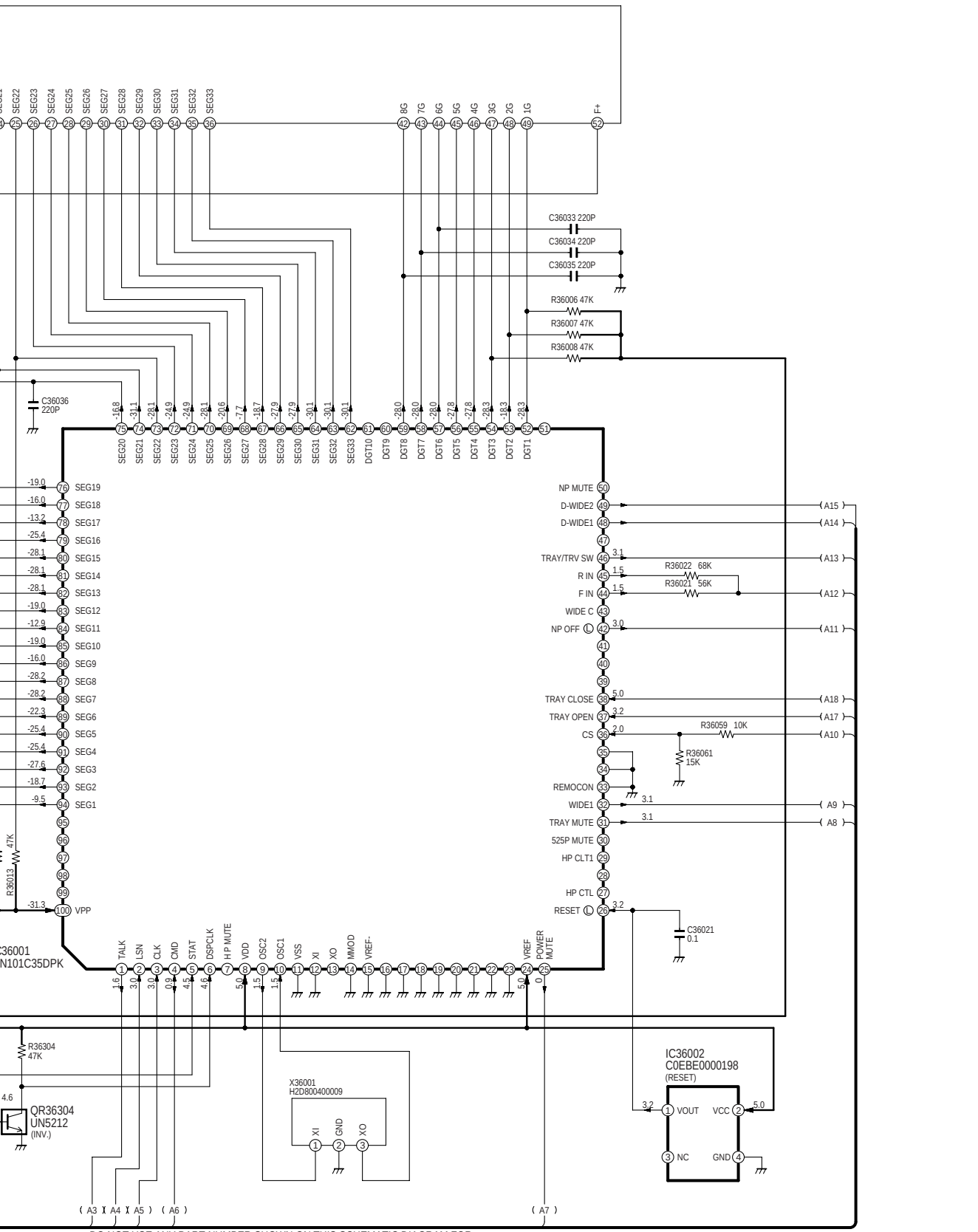
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
POWER SUPPLY/RF SECTION
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

16.3. TIMER SECTION IN MAIN SCHEMATIC DIAGRAM





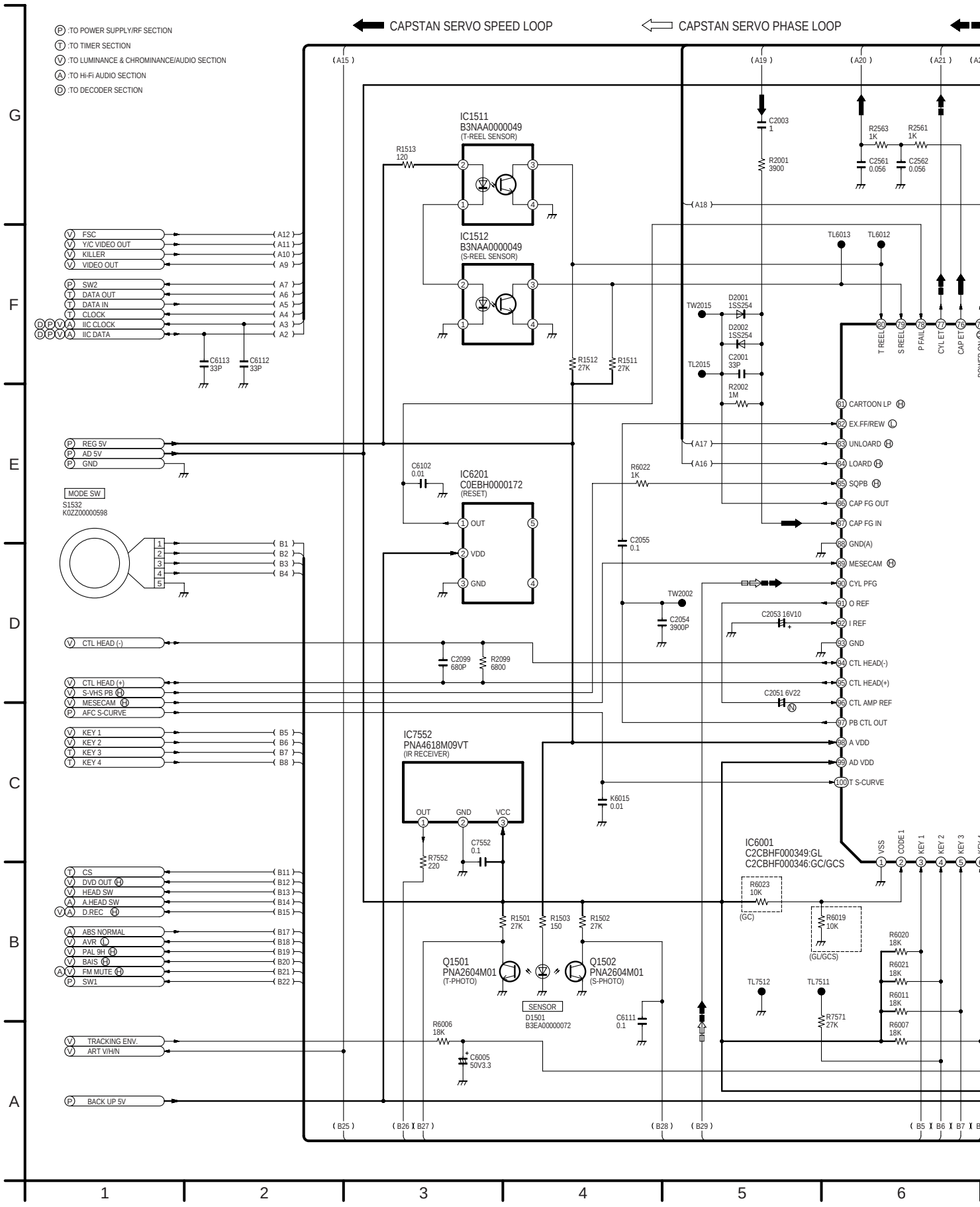
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

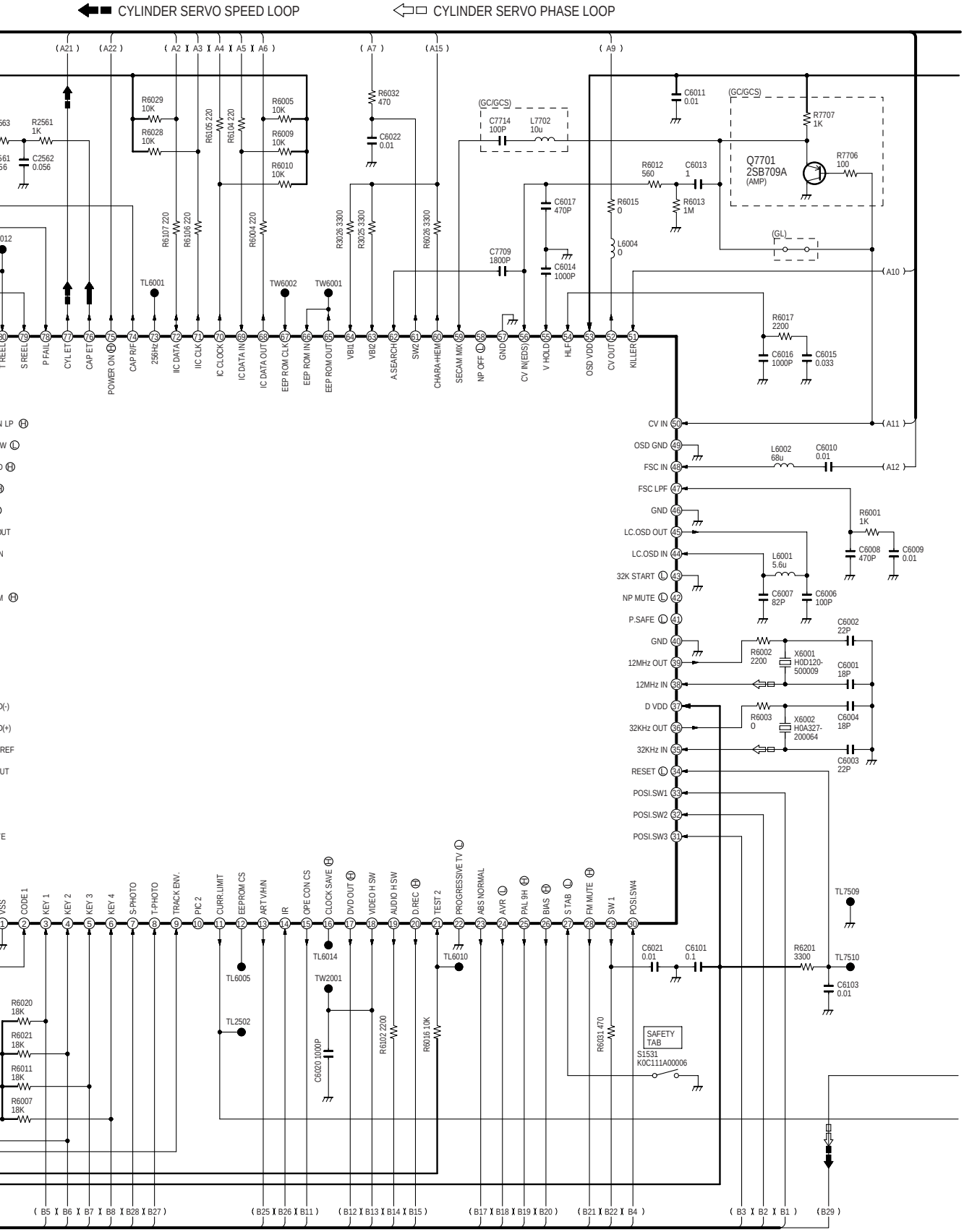
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
TIMER SECTION SCHEMATIC DIAGRAM

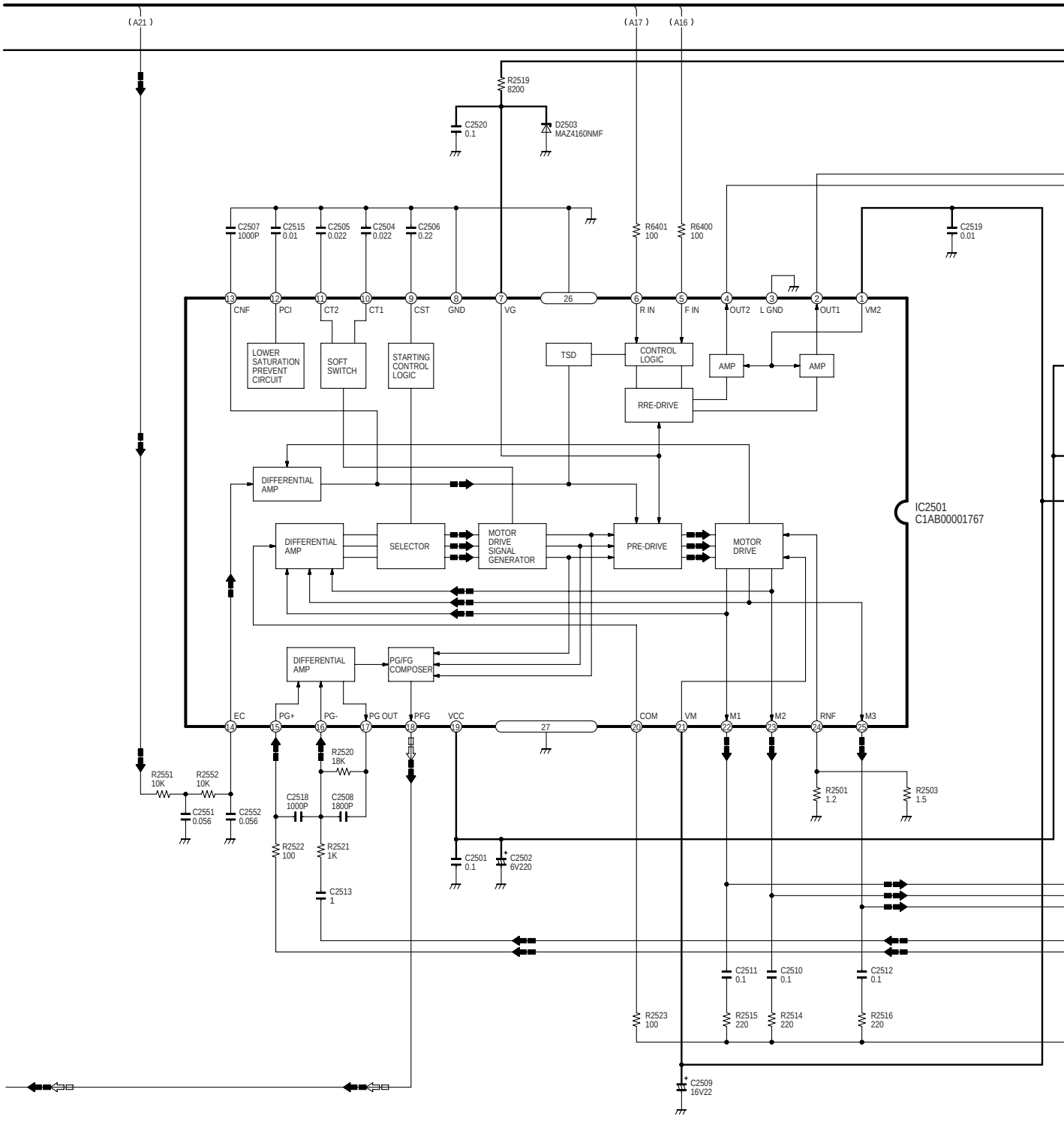
6 | 7 | 8 | 9

16.4. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM





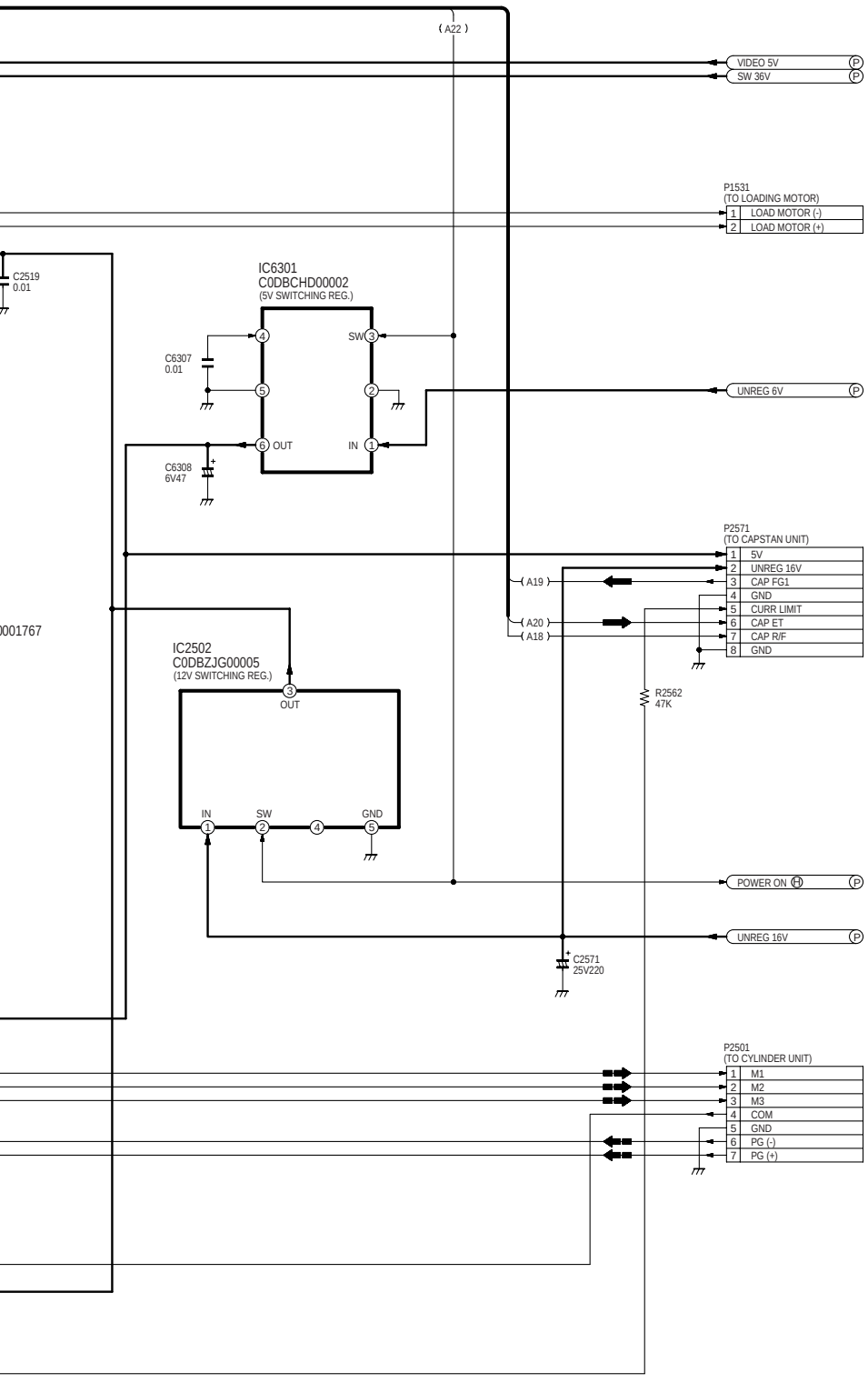
NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

NOTE:D
ORD

12 | 13 | 14 | 15 | 16 | 17

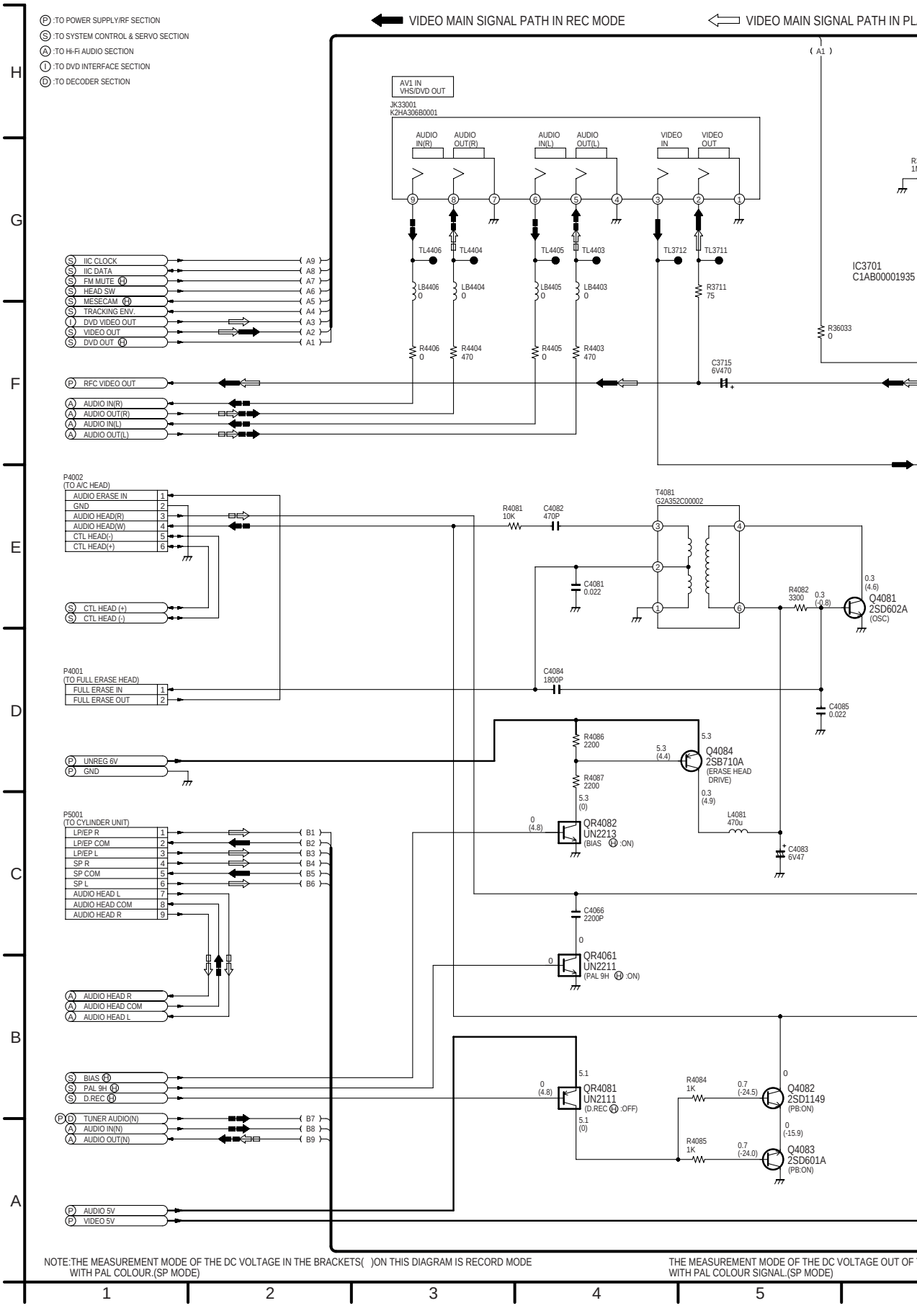


NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

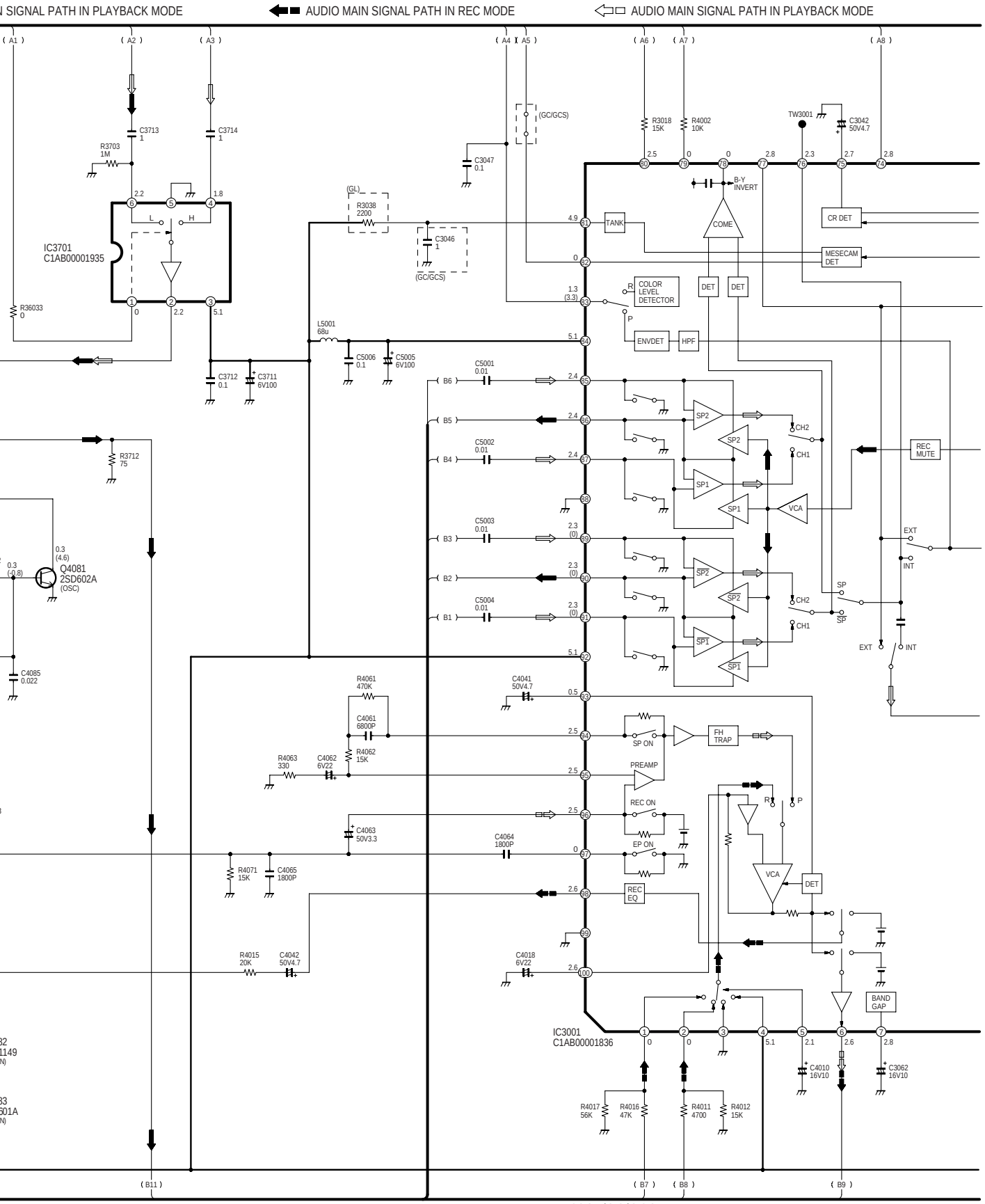
17 | 18 | 19 | 20

NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO
SECTION SCHEMATIC DIAGRAM

16.5. LUMINANCE & CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRA



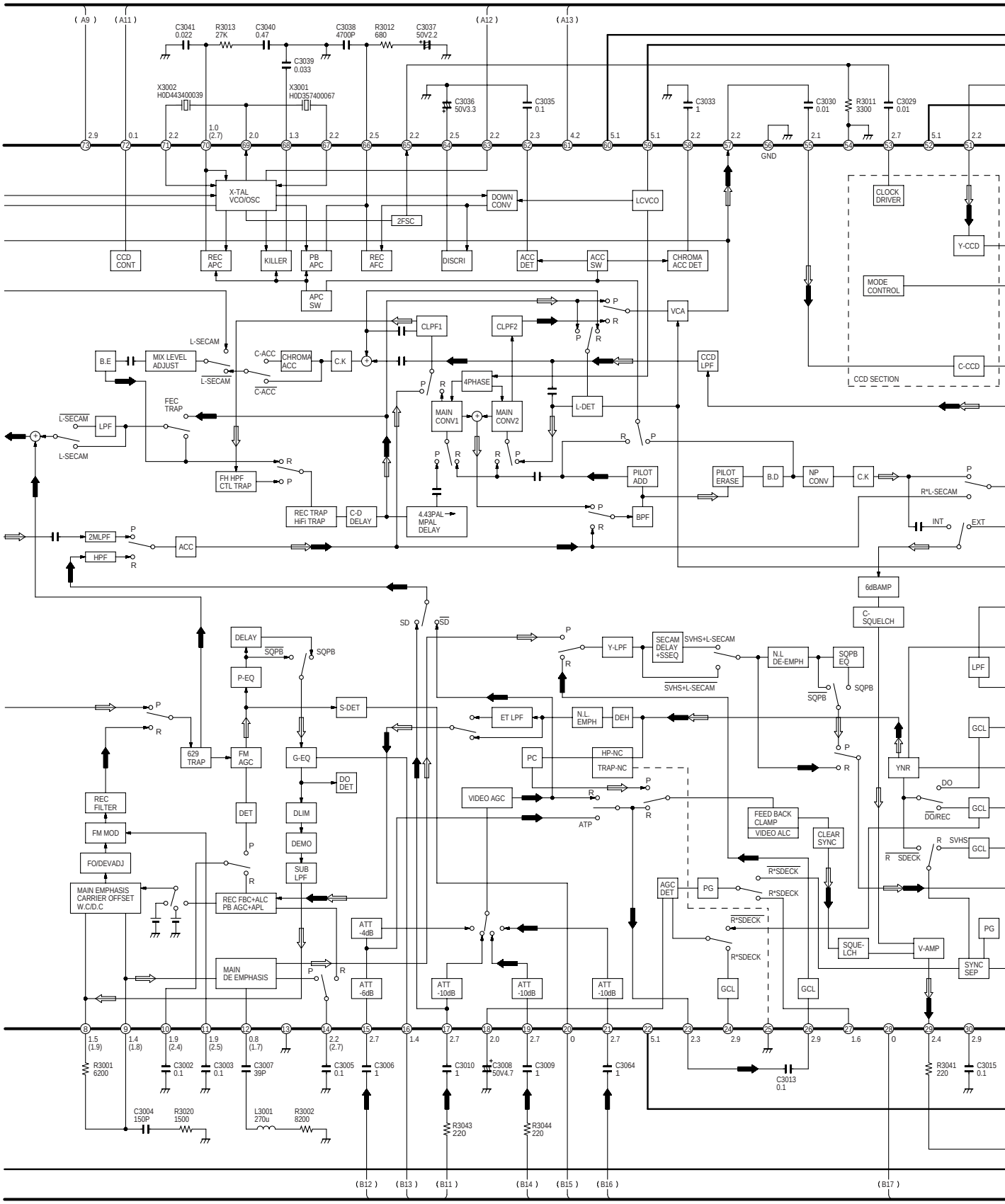
DIAGRAM



THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE
MODE)

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

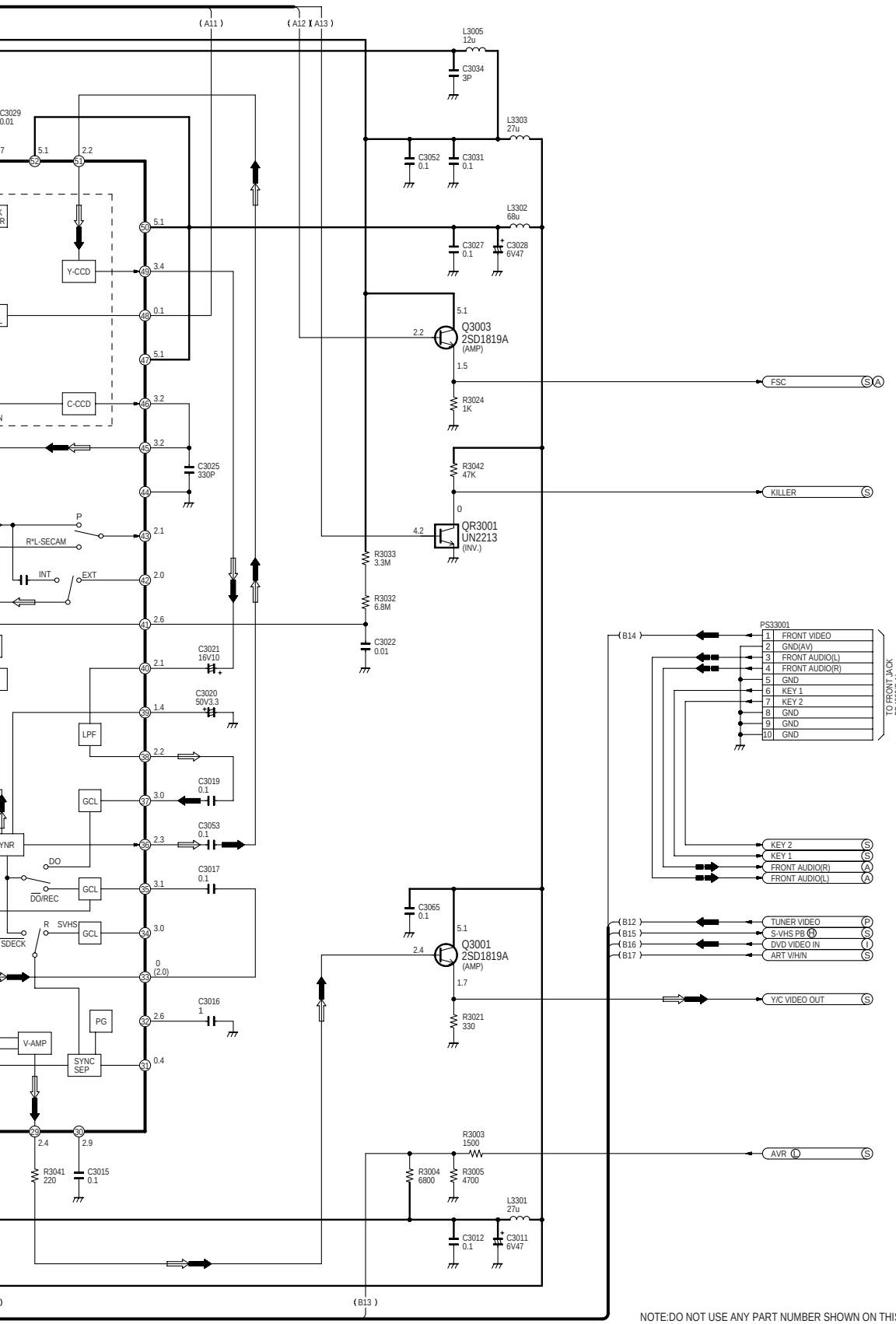
6 7 8 9 10 11



NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS RE
MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASUR

12 13 14 15 16 17 18



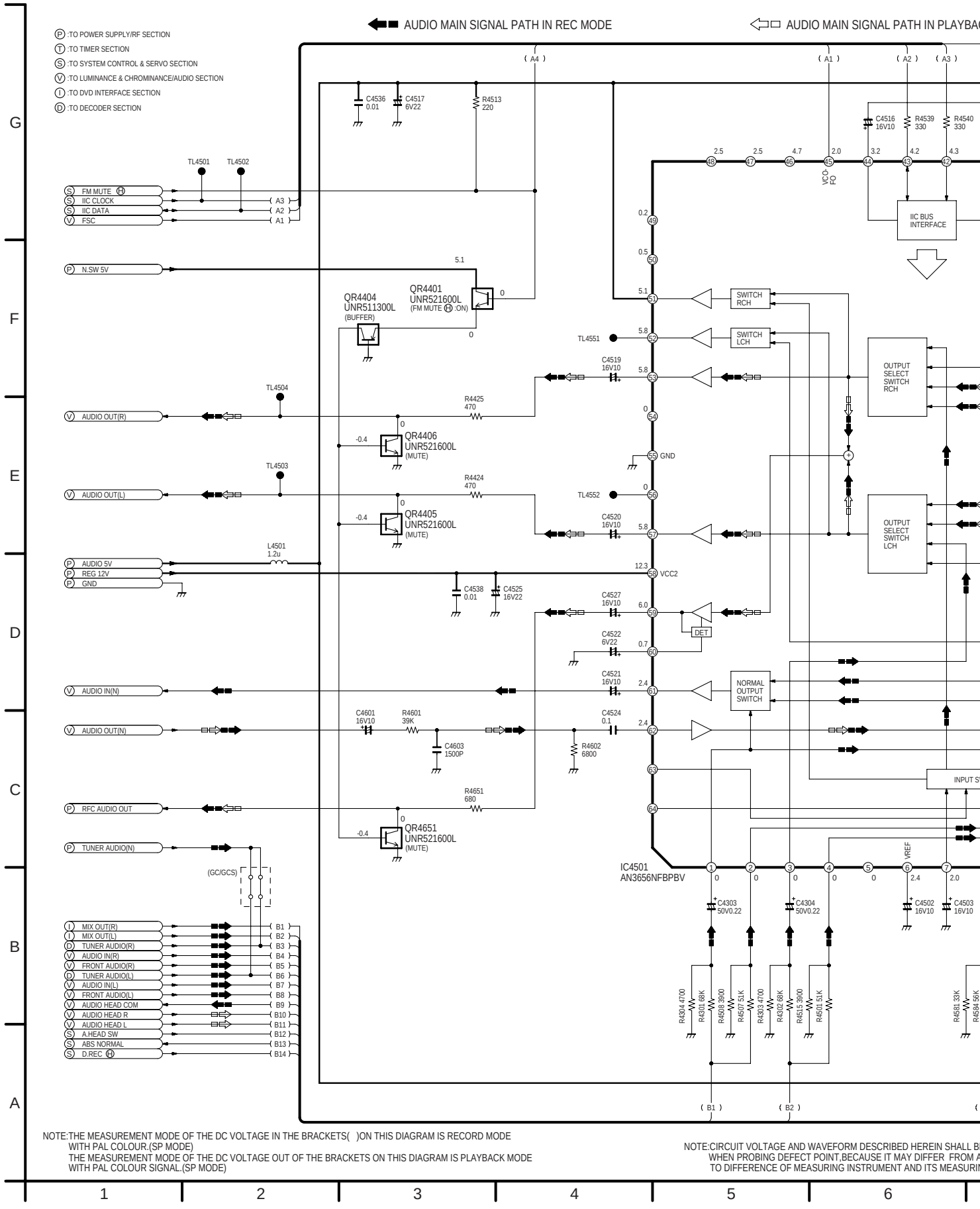
ALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT
DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

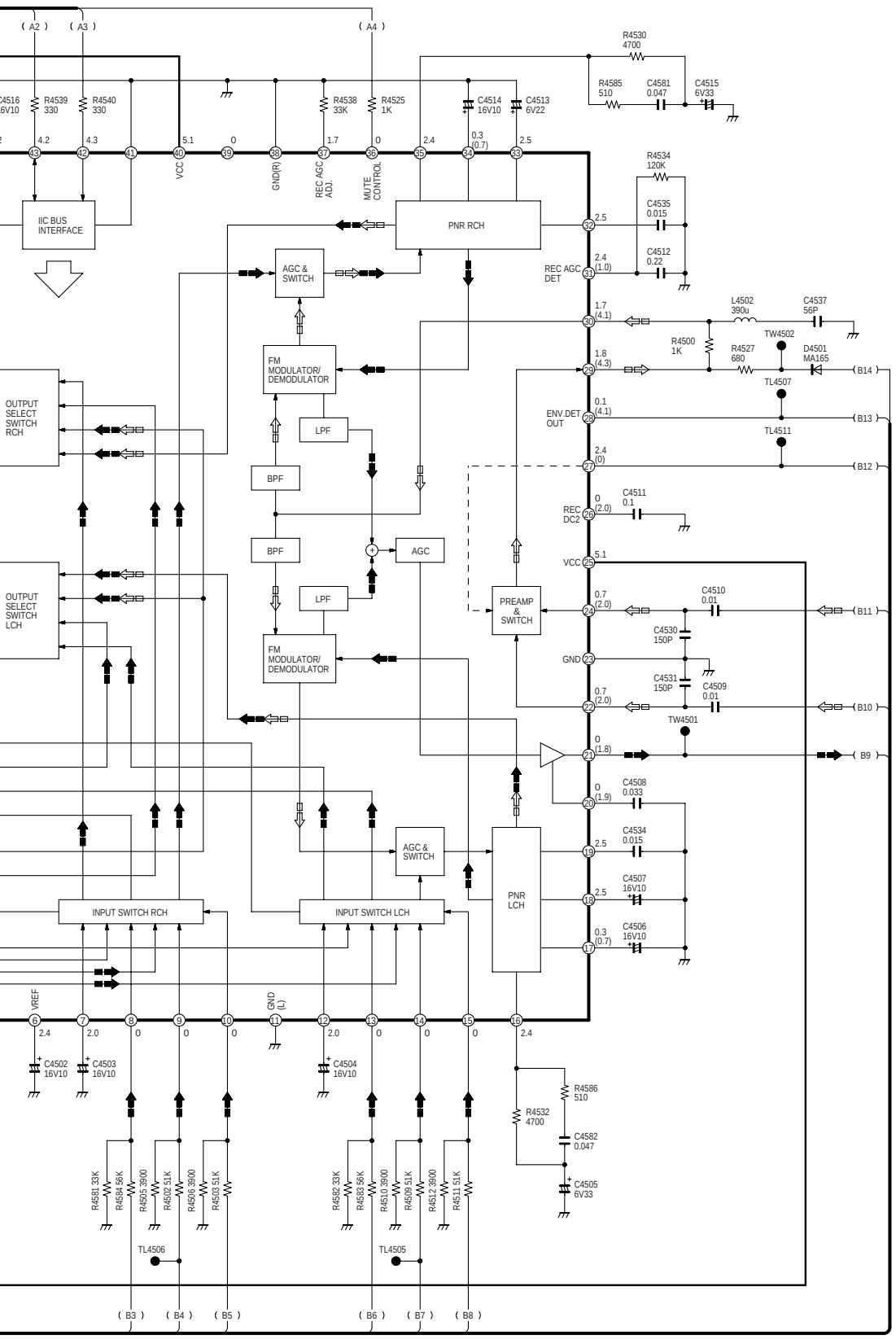
NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/
AUDIO SECTION
SCHEMATIC DIAGRAM

18 19 20 21 22 23

16.6. Hi-Fi AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM



AL PATH IN PLAYBACK MODE



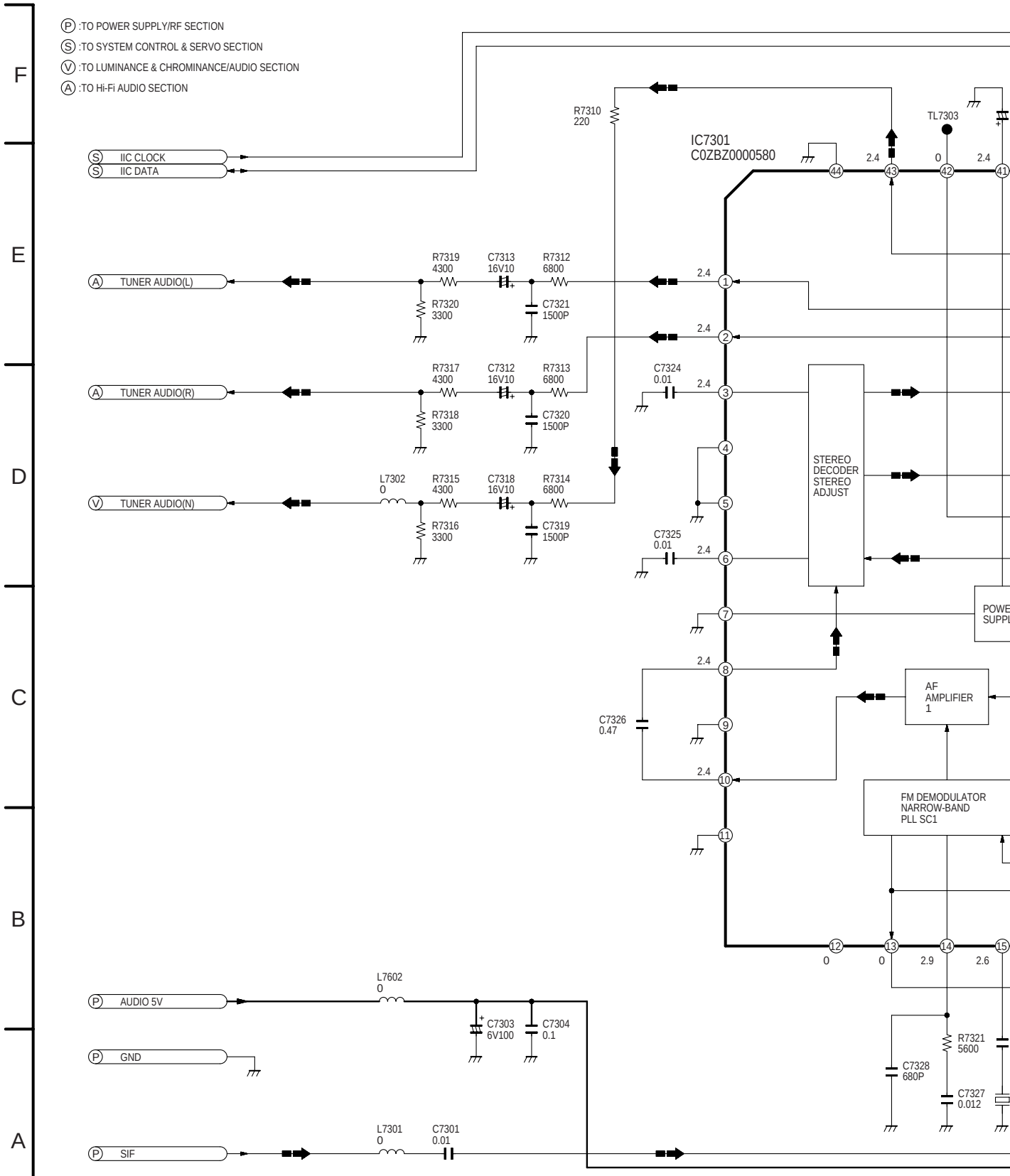
CRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION
E IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE
MENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
Hi-Fi AUDIO SECTION
SCHEMATIC DIAGRAM

6	7	8	9	10	11

16.7. DECORDER SECTION IN MAIN SCHEMATIC DIAGRAM (NV-VP32GL)



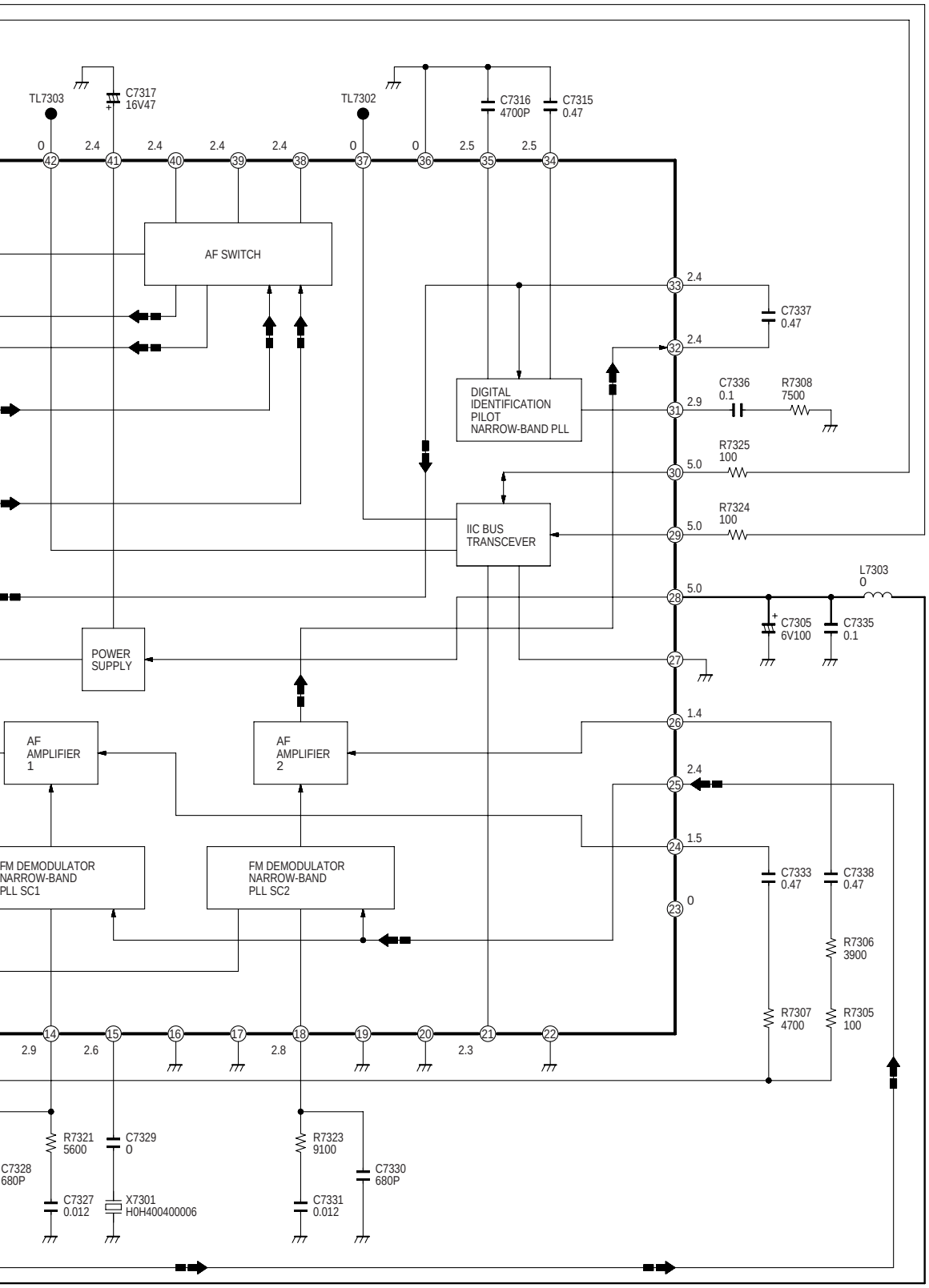
NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

-)

AUDIO SIGNAL PATH



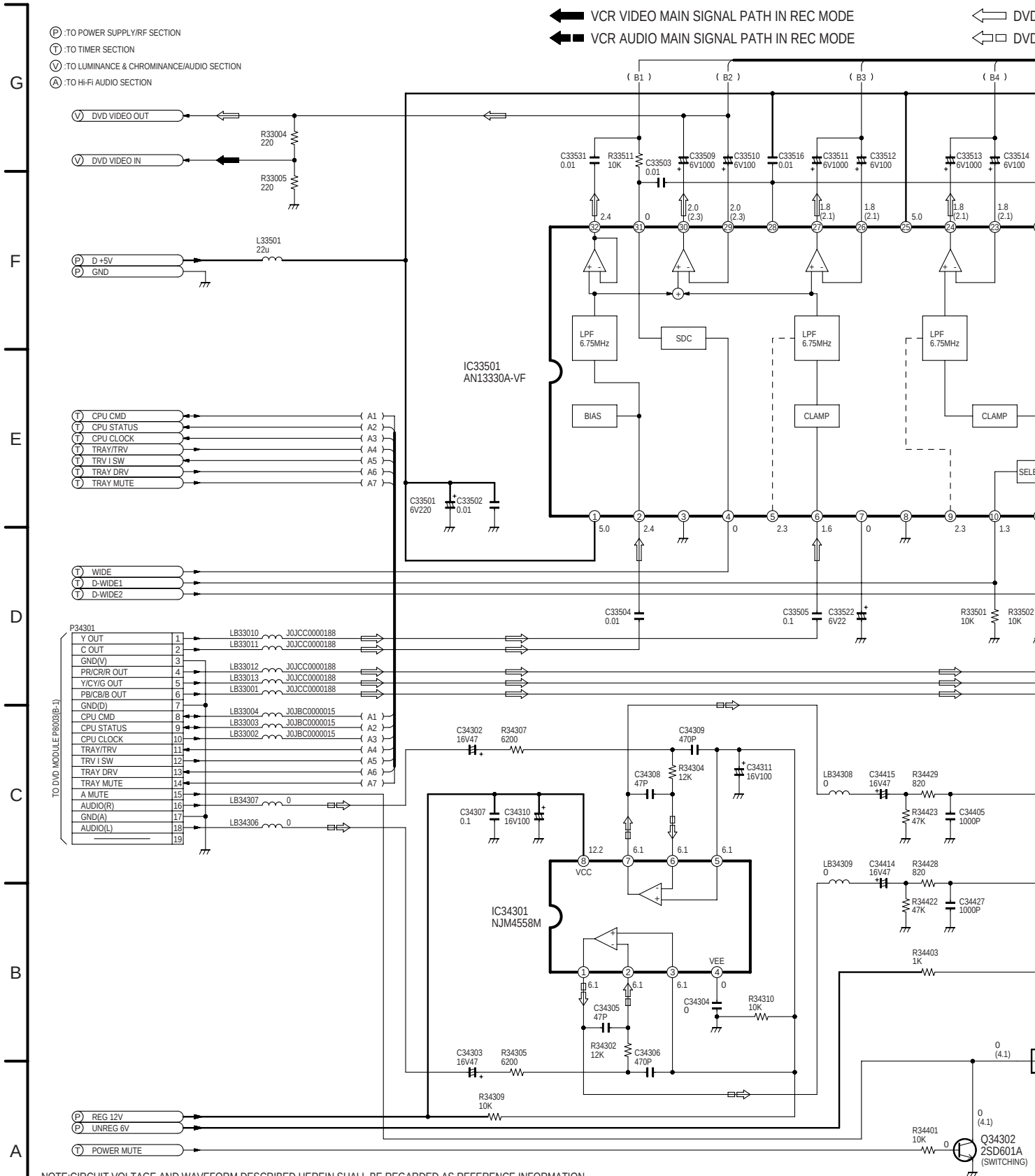
T,BECAUSE IT MAY DIFFER
'SELF.

TS LIST.

NV-VP32GL
DECODER SECTION SCHEMATIC DIAGRAM

5 6 7 8

16.8. DVD INTERFACE SECTION IN MAIN SCHEMATIC DIAGRAM



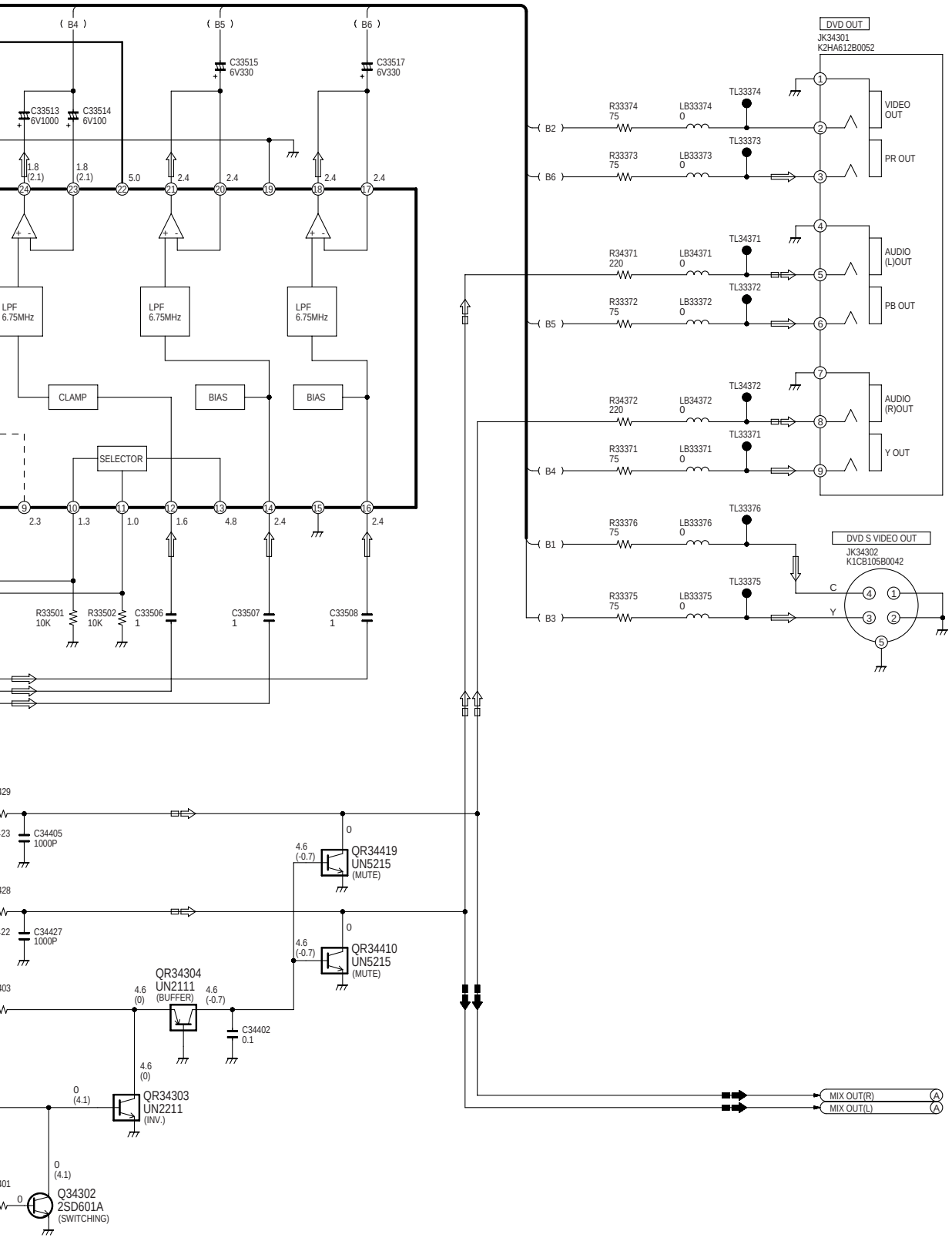
NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAG
THE MEASUREMENT MODE OF THE DC VOLTAG

DVD VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

DVD AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

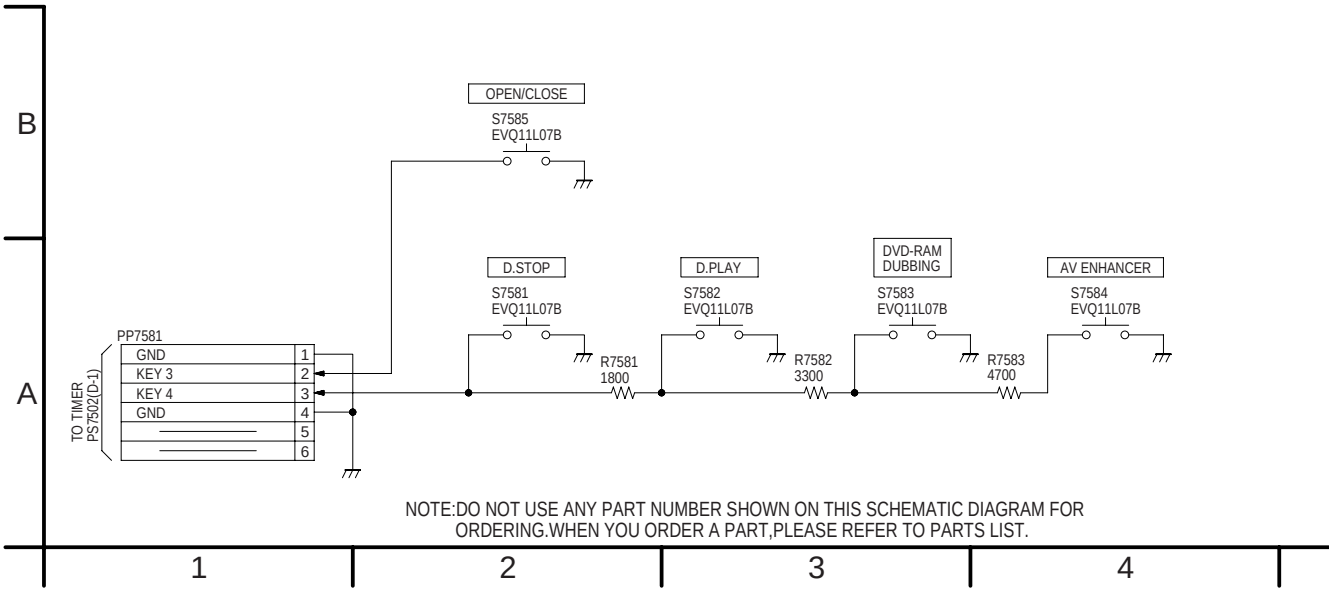


DE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
DE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

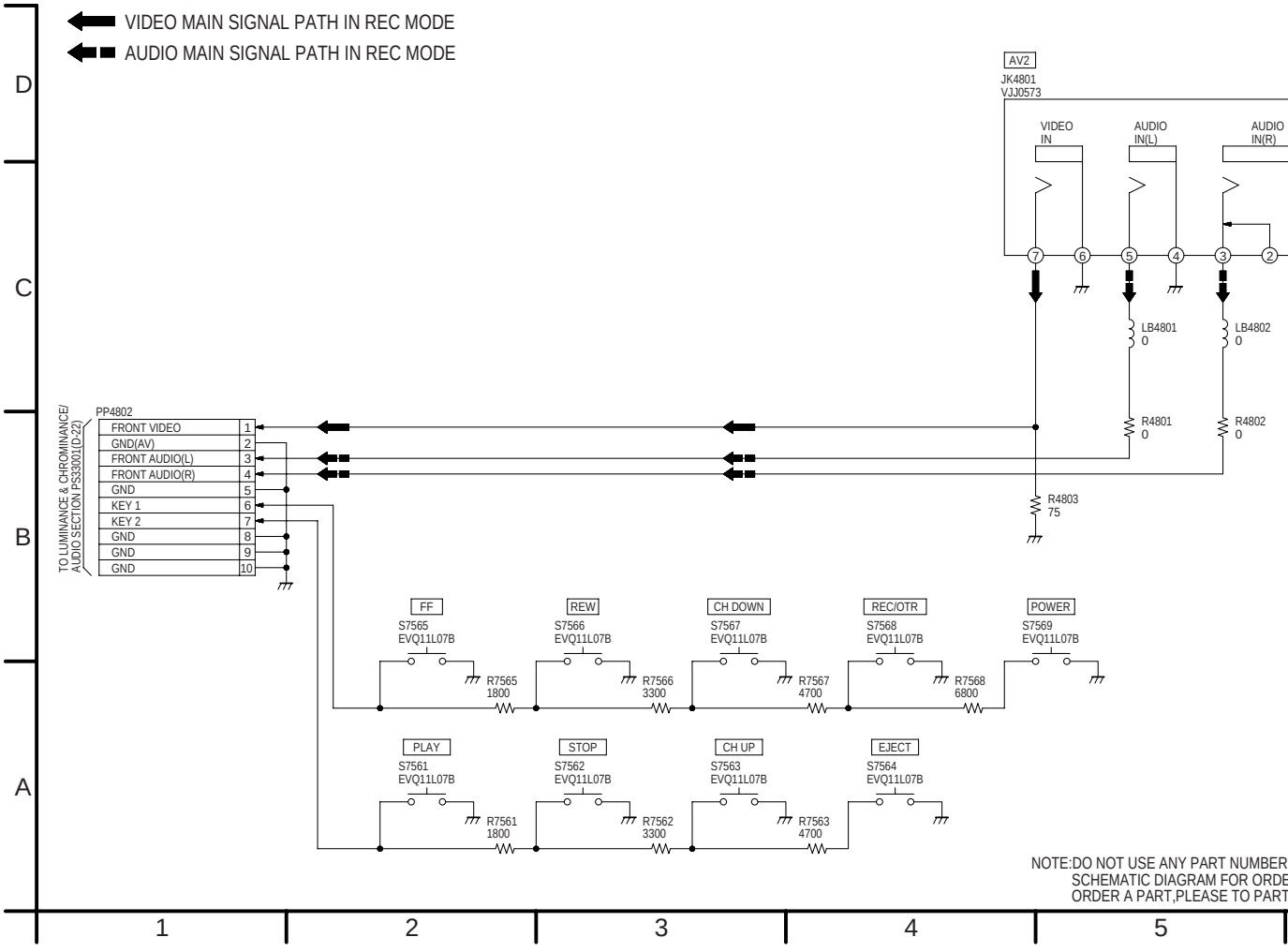
NV-VP32GL/GC/GCS
DVD INTERFACE SECTION SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

16.9. FRONT SW SCHEMATIC DIAGRAM

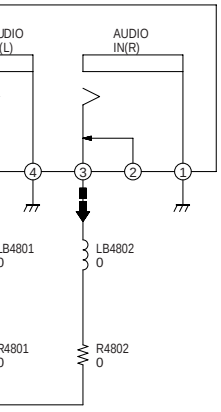


16.10. FRONT JACK SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
FRONT SW SCHEMATIC DIAGRAM

5

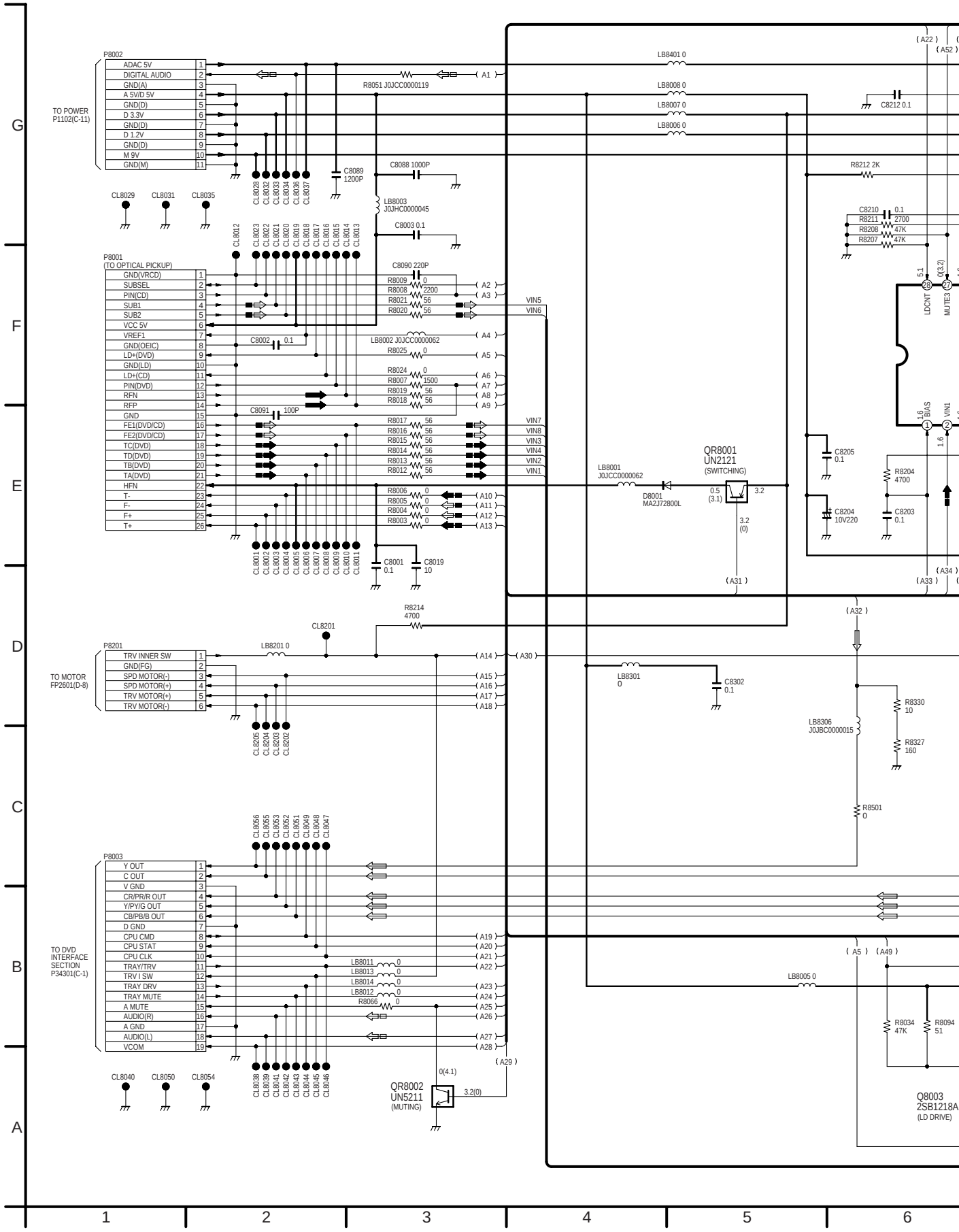


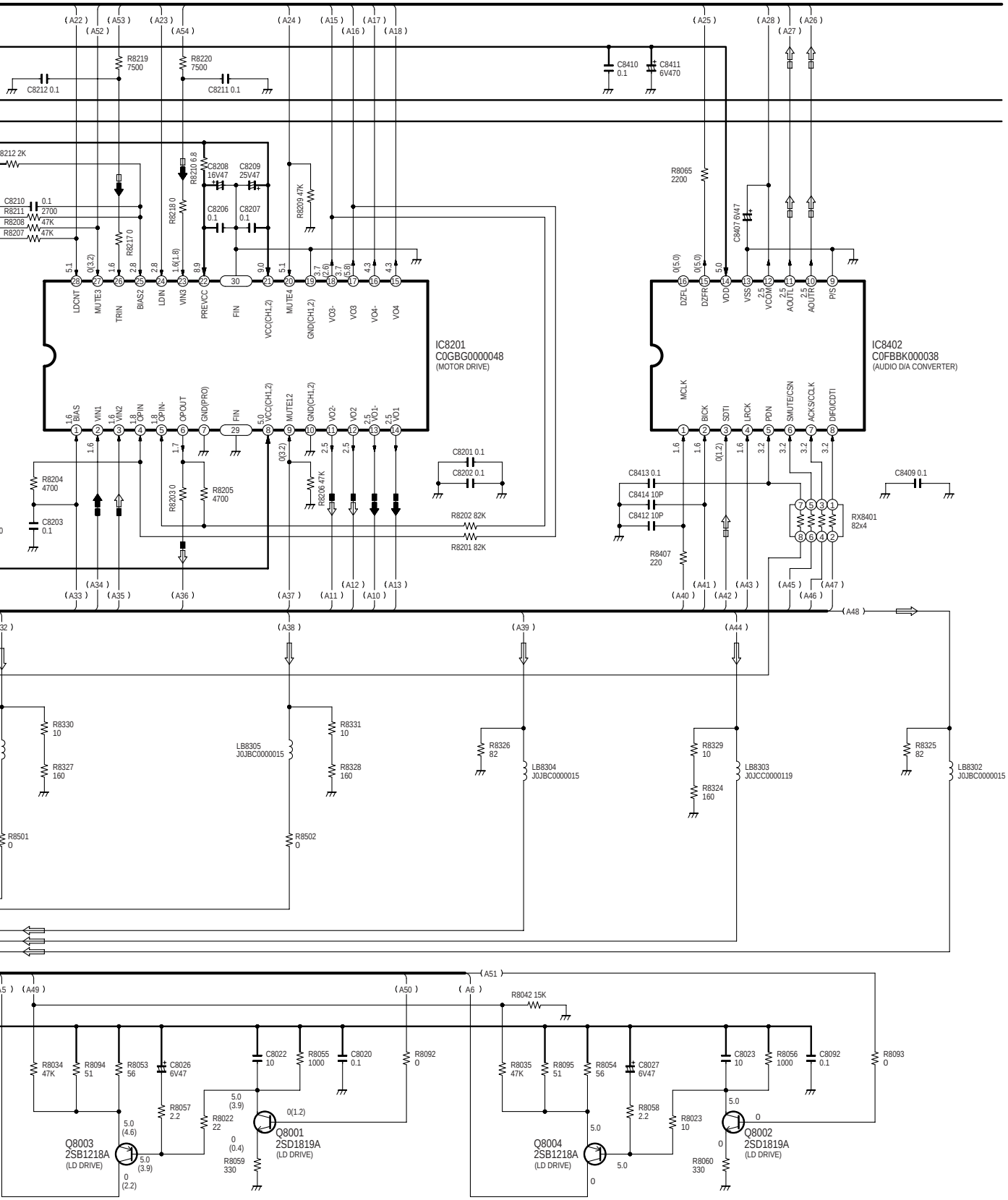
E ANY PART NUMBER SHOWN ON THIS
C DIAGRAM FOR ORDERING.WHEN YOU
ART,PLEASE TO PARTS LIST.

NV-VP32GL/GC/GCS
FRONT JACK SCHEMATIC DIAGRAM

5 6

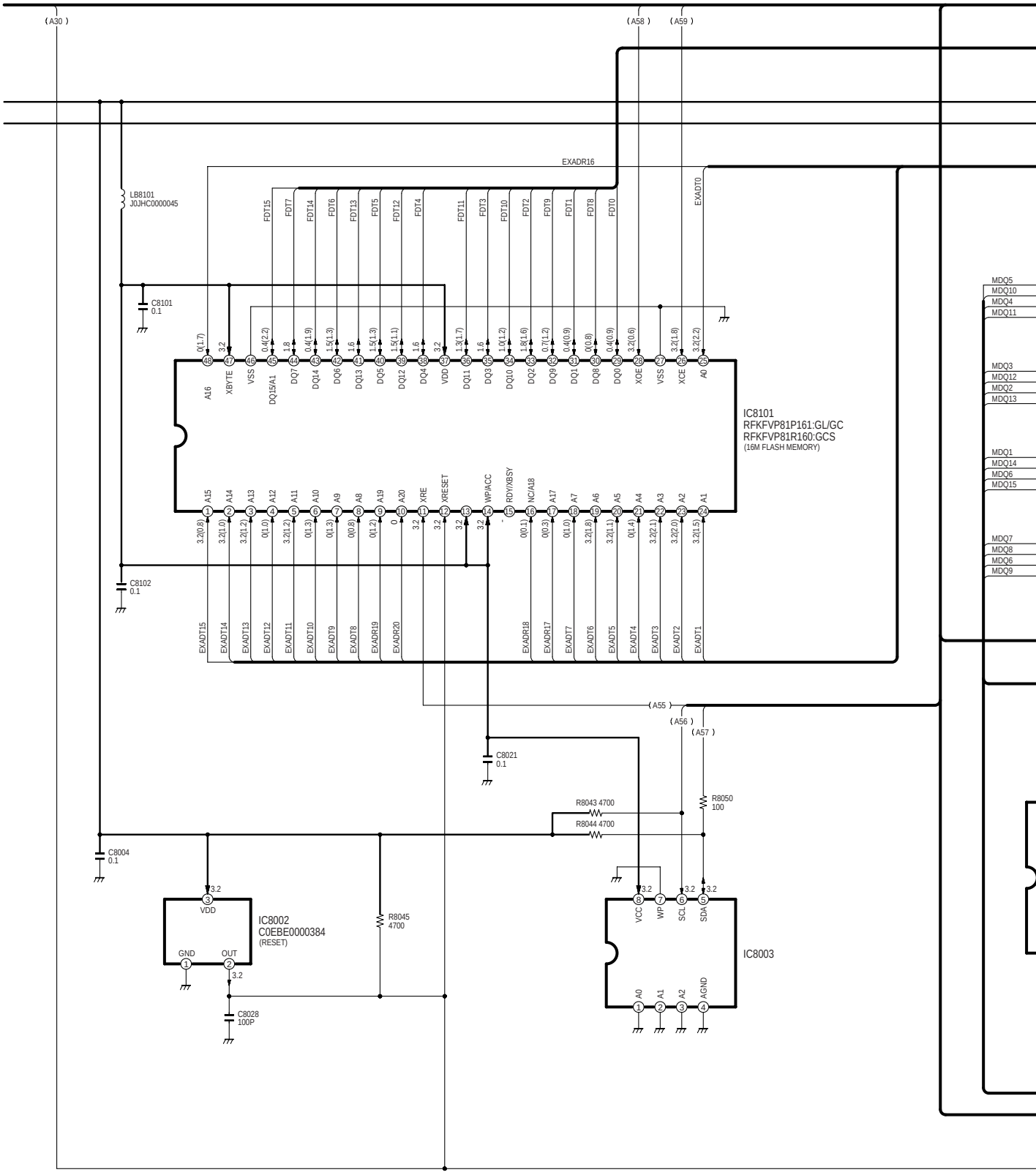
16.11. DVD MODULE SCHEMATIC DIAGRAM





NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

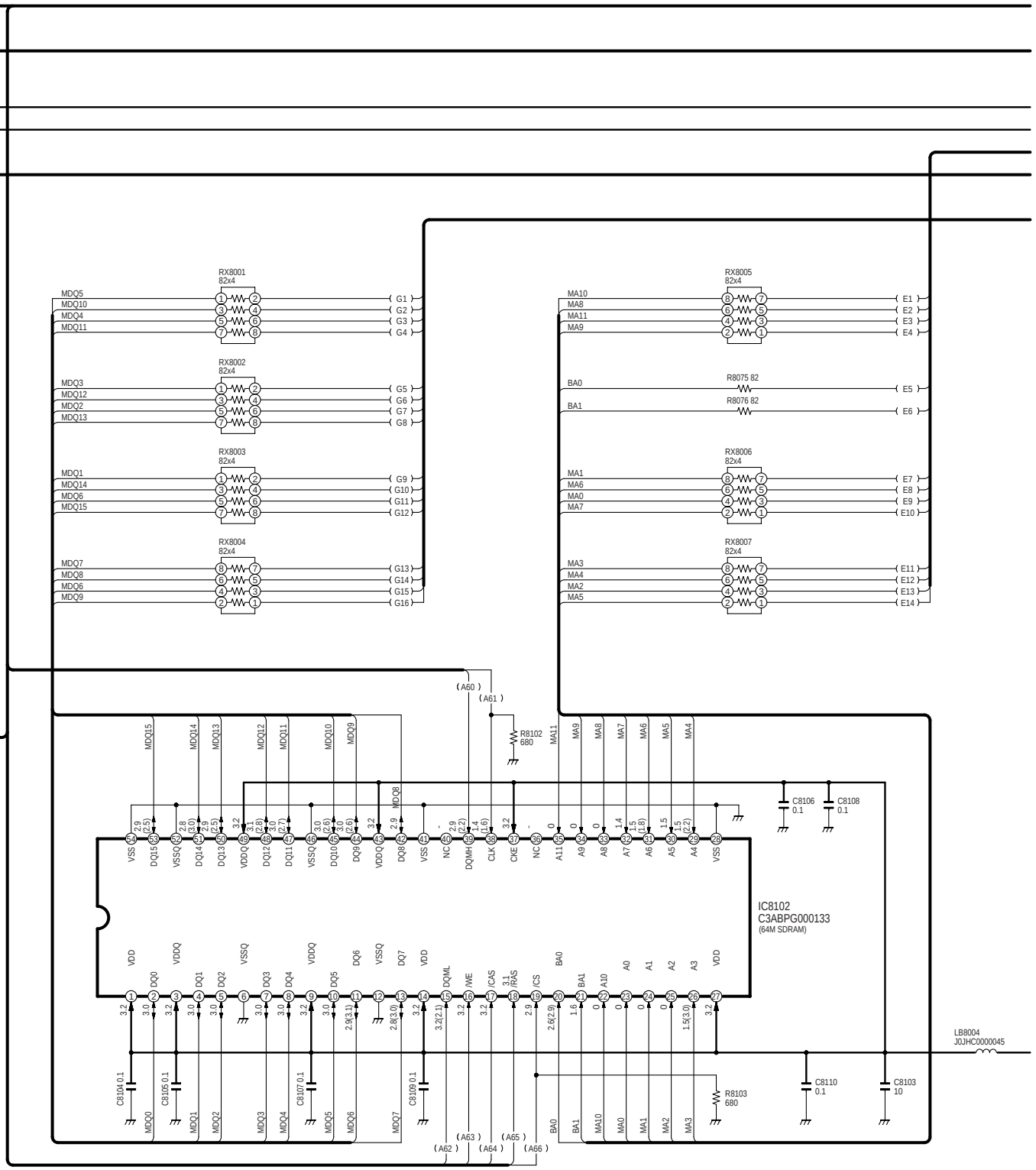
6 | 7 | 8 | 9 | 10 | 11



NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE
FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND

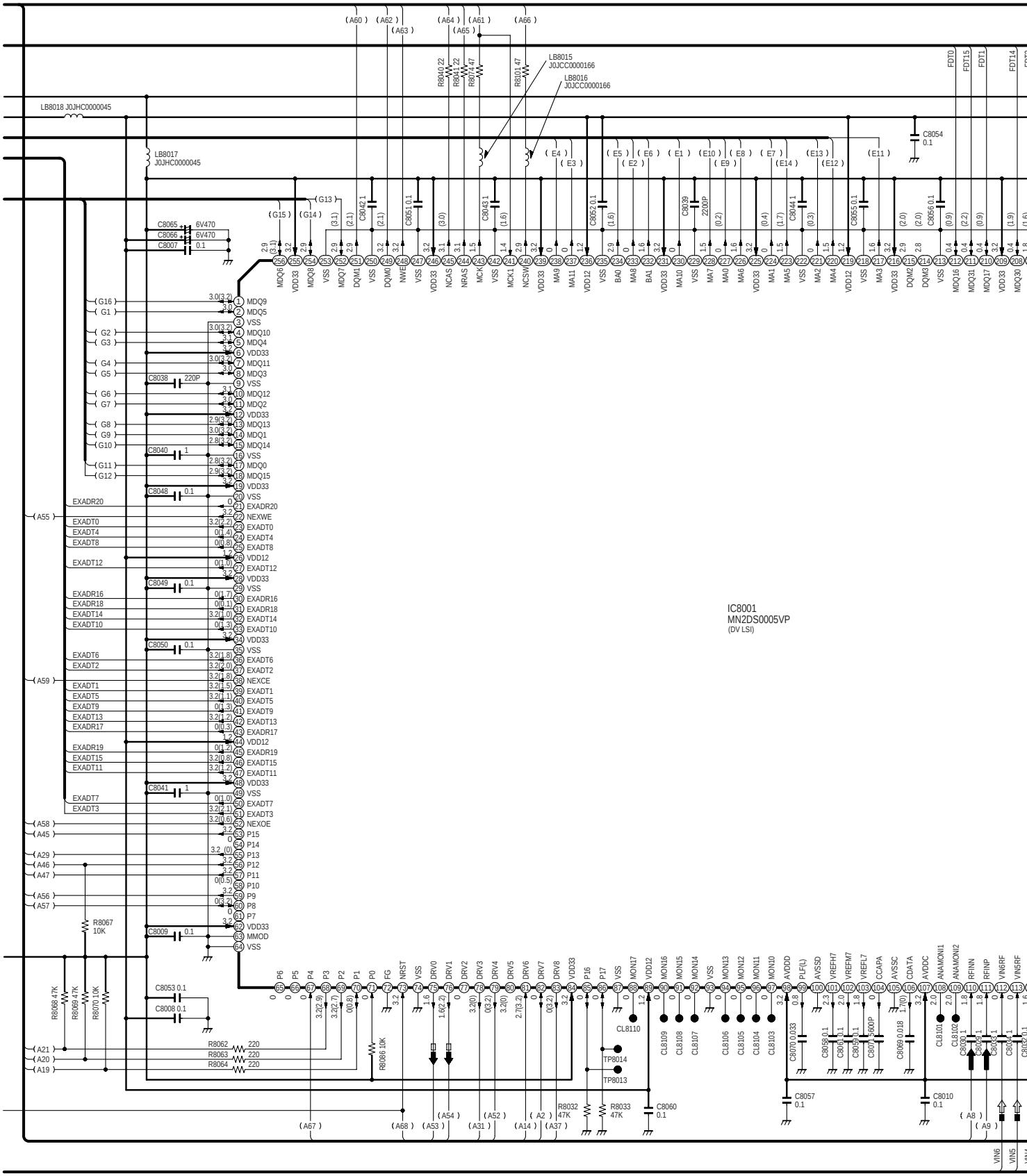
12 | 13 | 14 | 15 | 16 | 17



EGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER
URING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

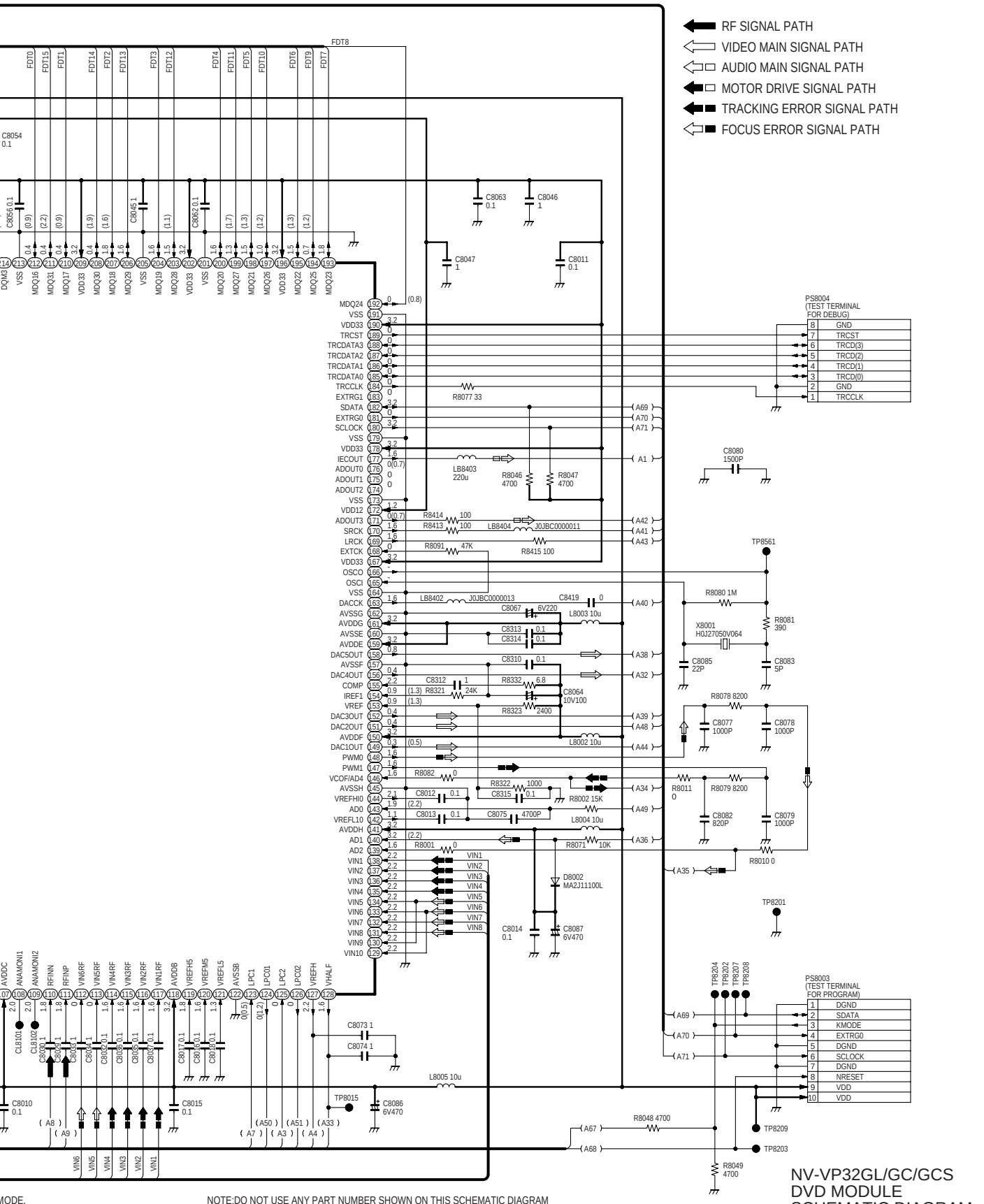
17 | 18 | 19 | 20 | 21 | 22



NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

23 | 24 | 25 | 26 | 27 | 28



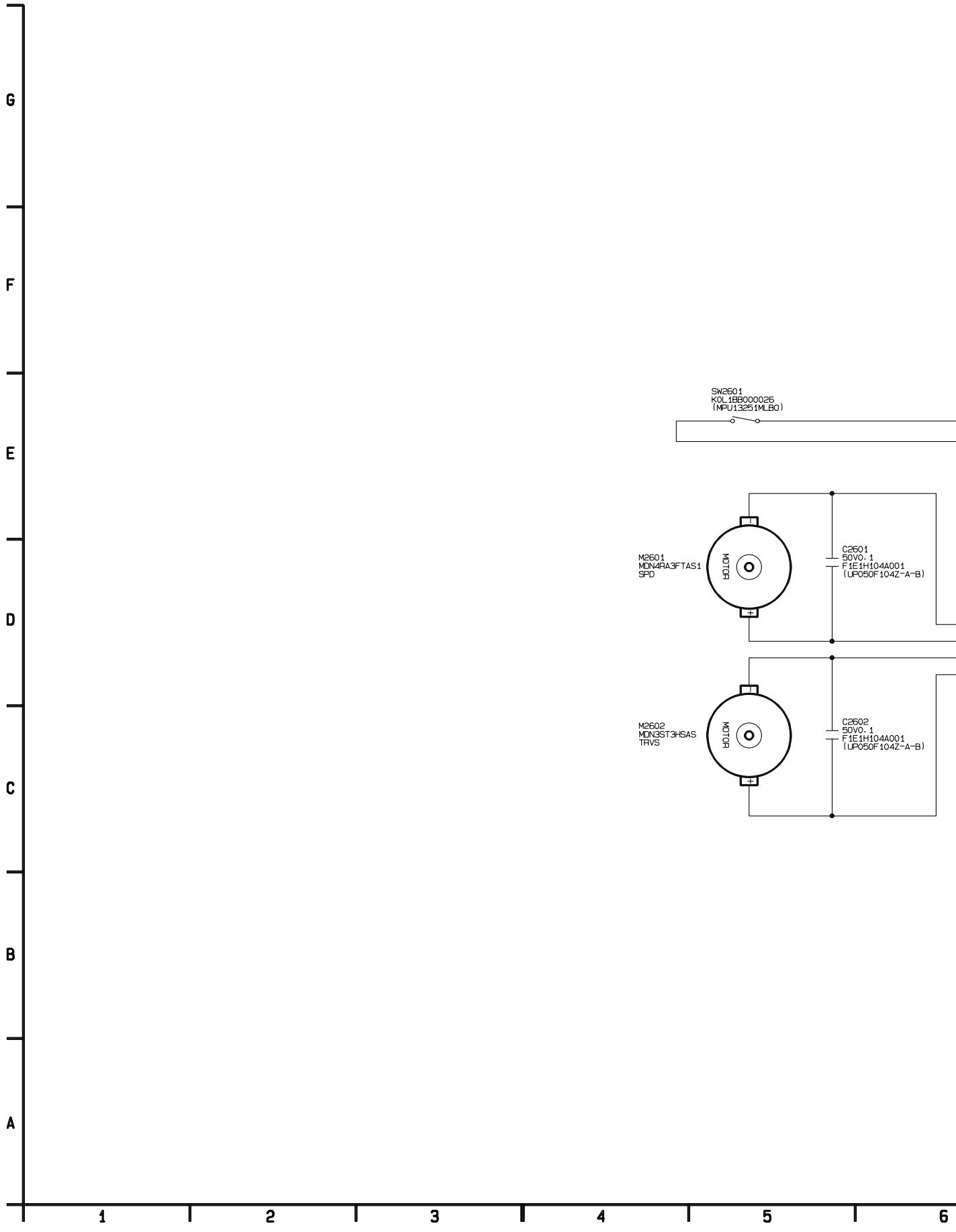
MODE.

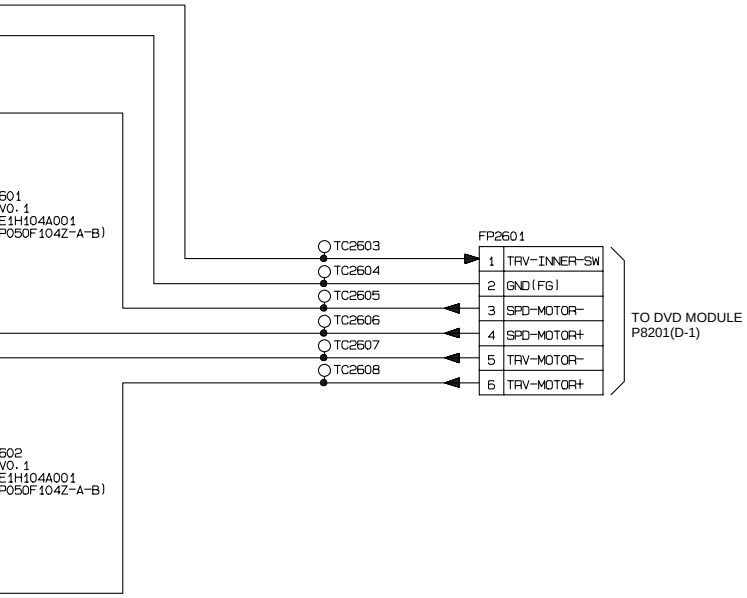
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

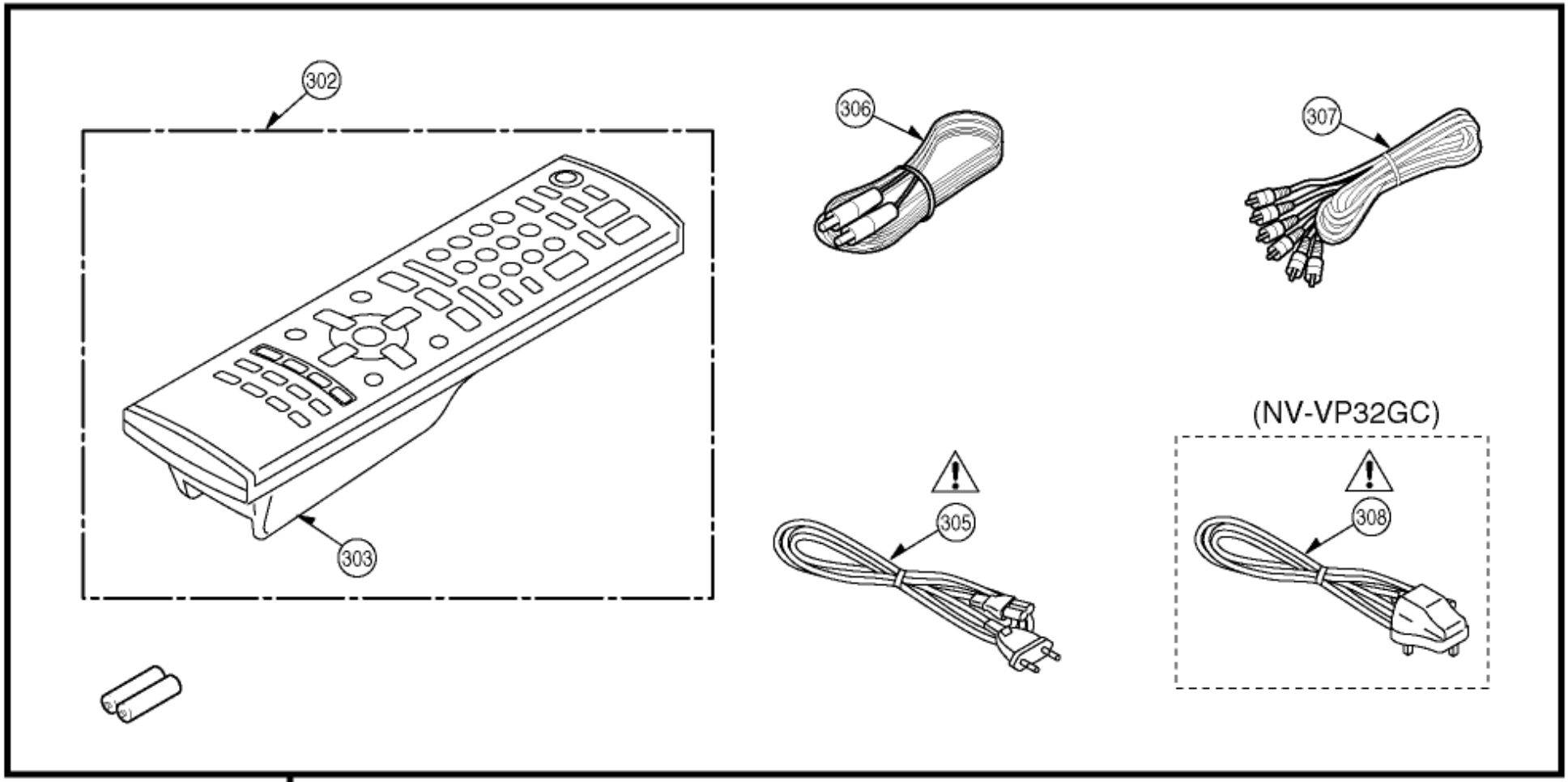
NV-VP32GL/GC/GCS
DVD MODULE
SCHEMATIC DIAGRAM

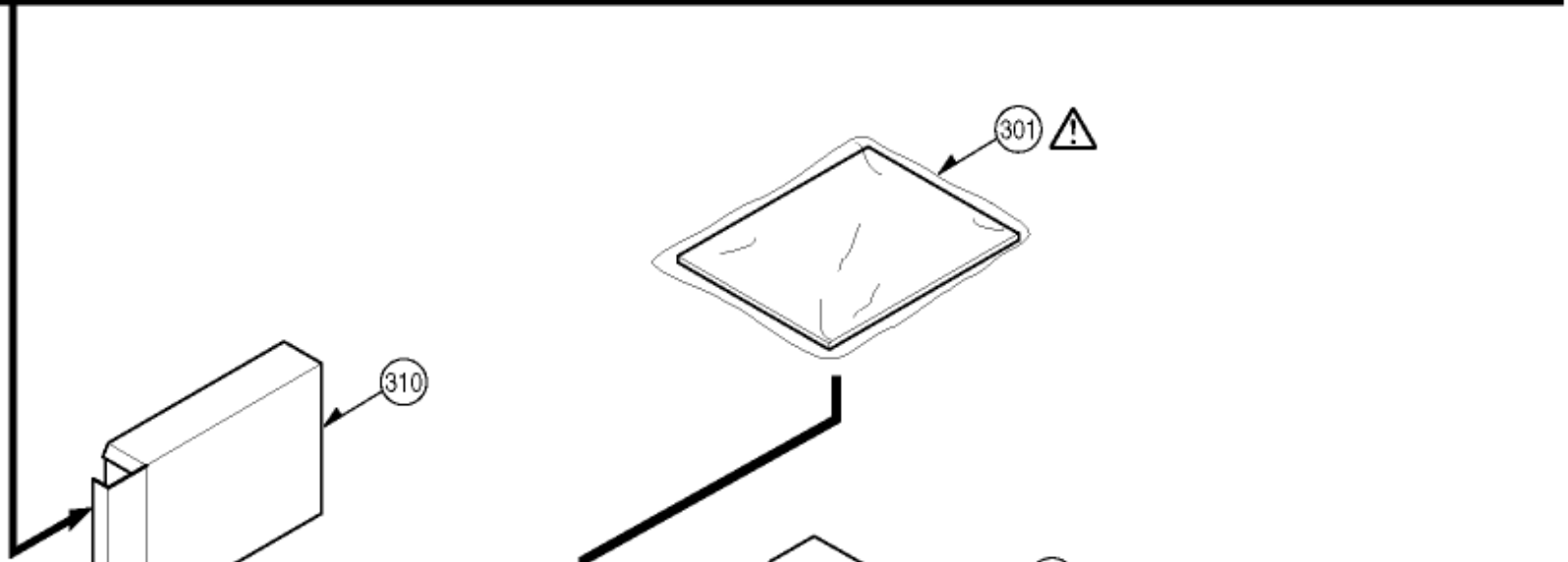
29 30 31 32 33

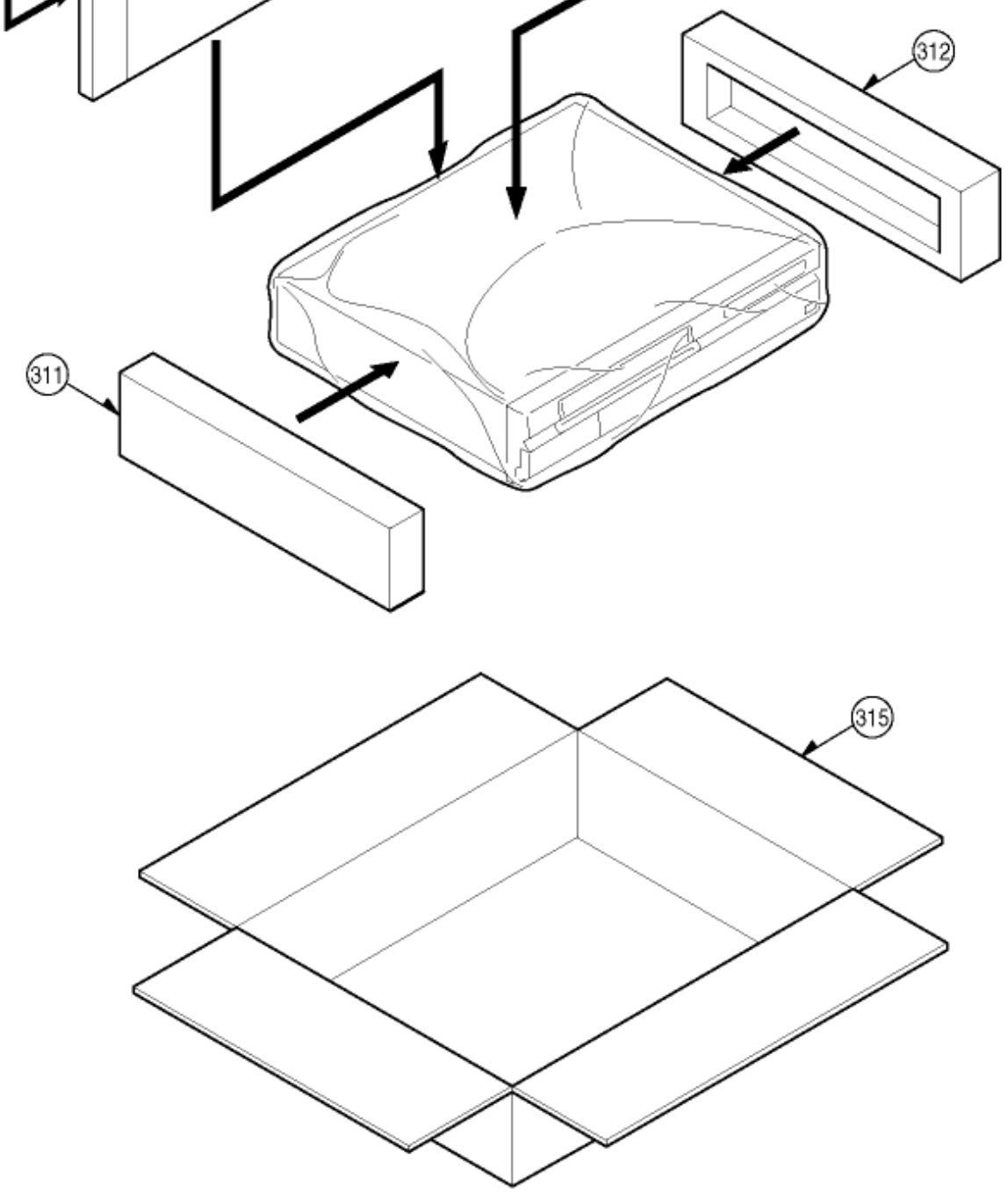
16.12. MOTOR SCHEMATIC DIAGRAM

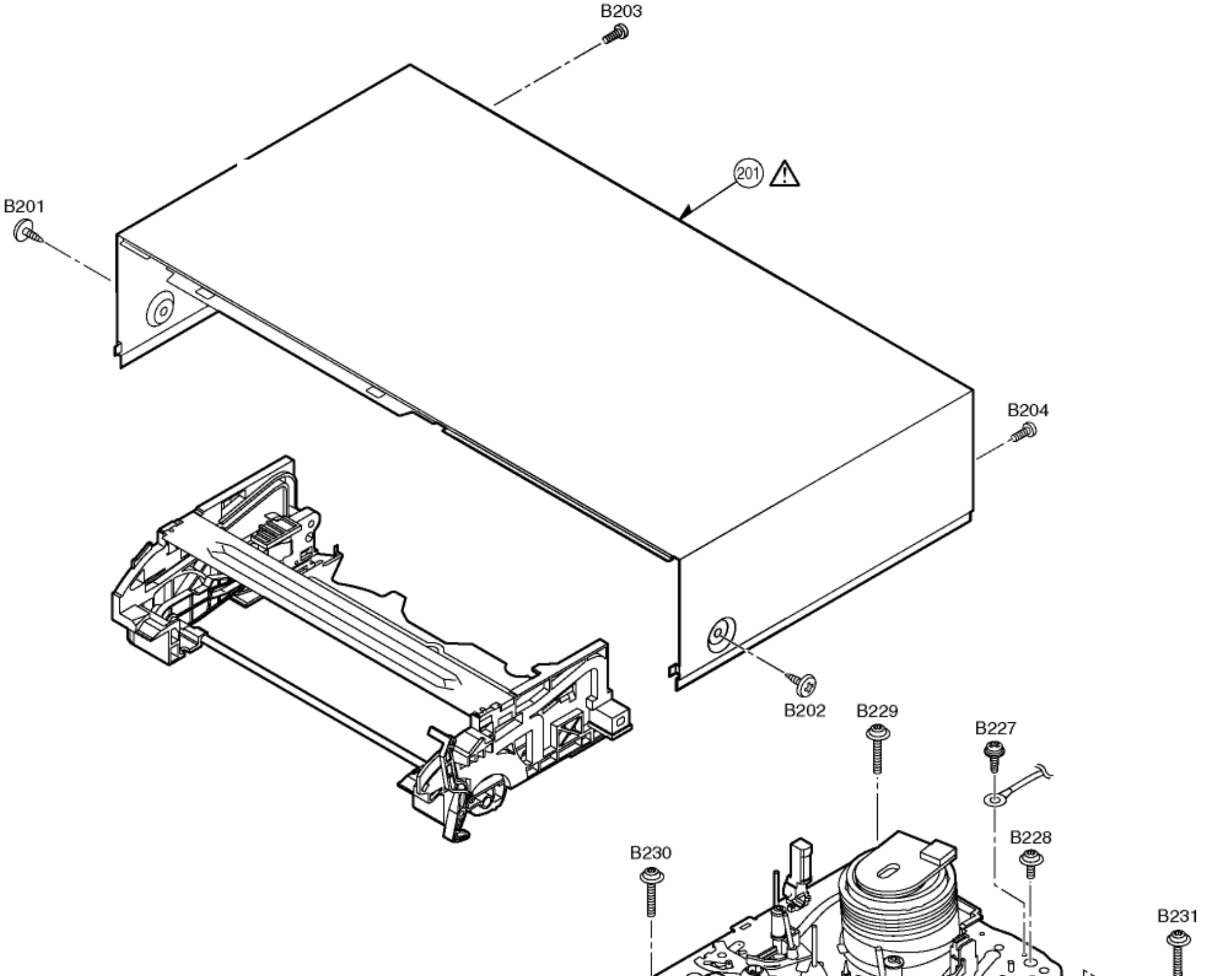


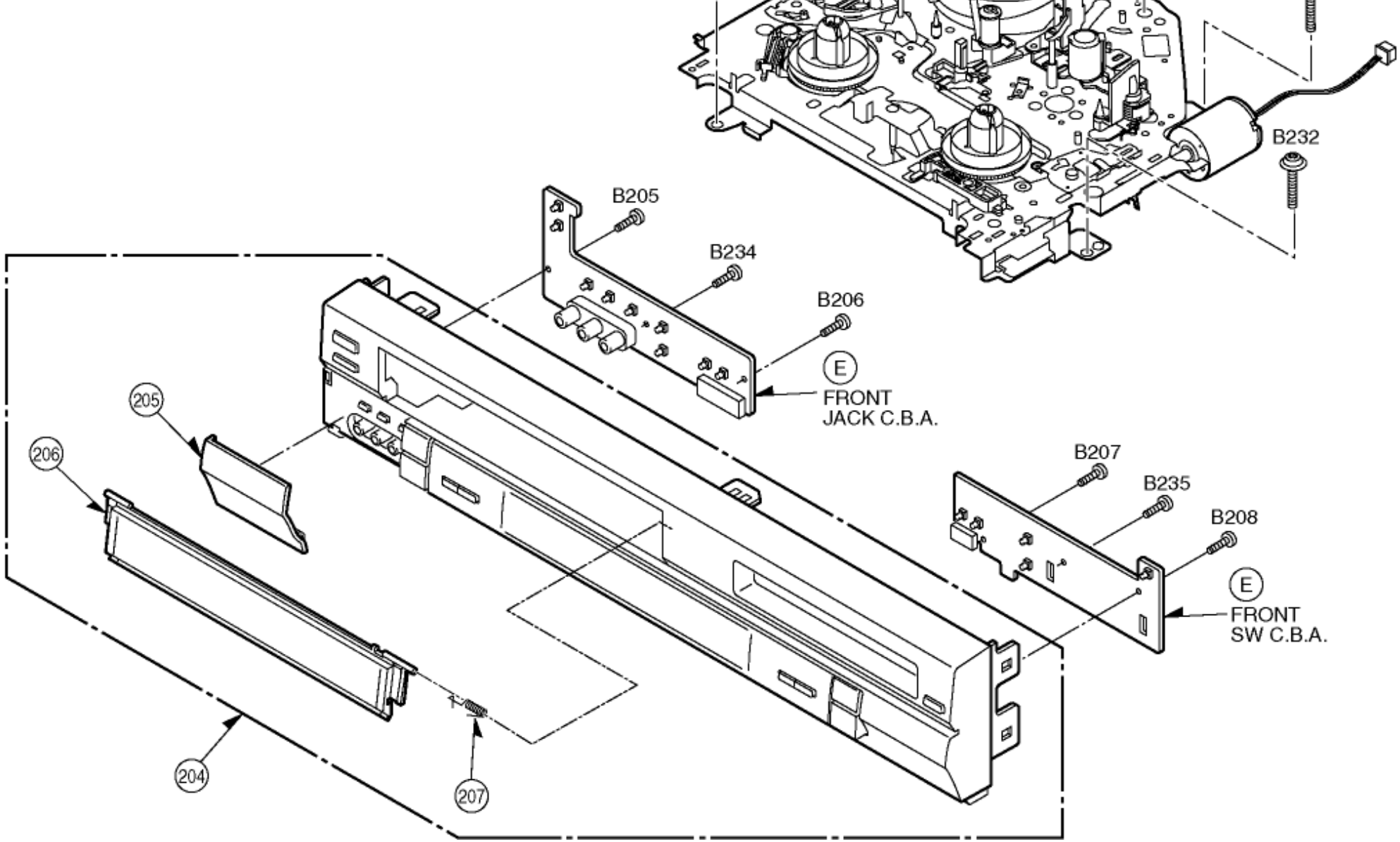

501
V0.1
E1H104A001
P050F104Z-A-B)
502
V0.1
E1H104A001
P050F104Z-A-B)
TC2603
TC2604
TC2605
TC2606
TC2607
TC2608
FP2601
1 TRV-INNER-SW
2 GND(FG)
3 SPD-MOTOR-
4 SPD-MOTOR+
5 TRV-MOTOR-
6 TRV-MOTOR+
TO DVD MODULE
P8201(D-1)

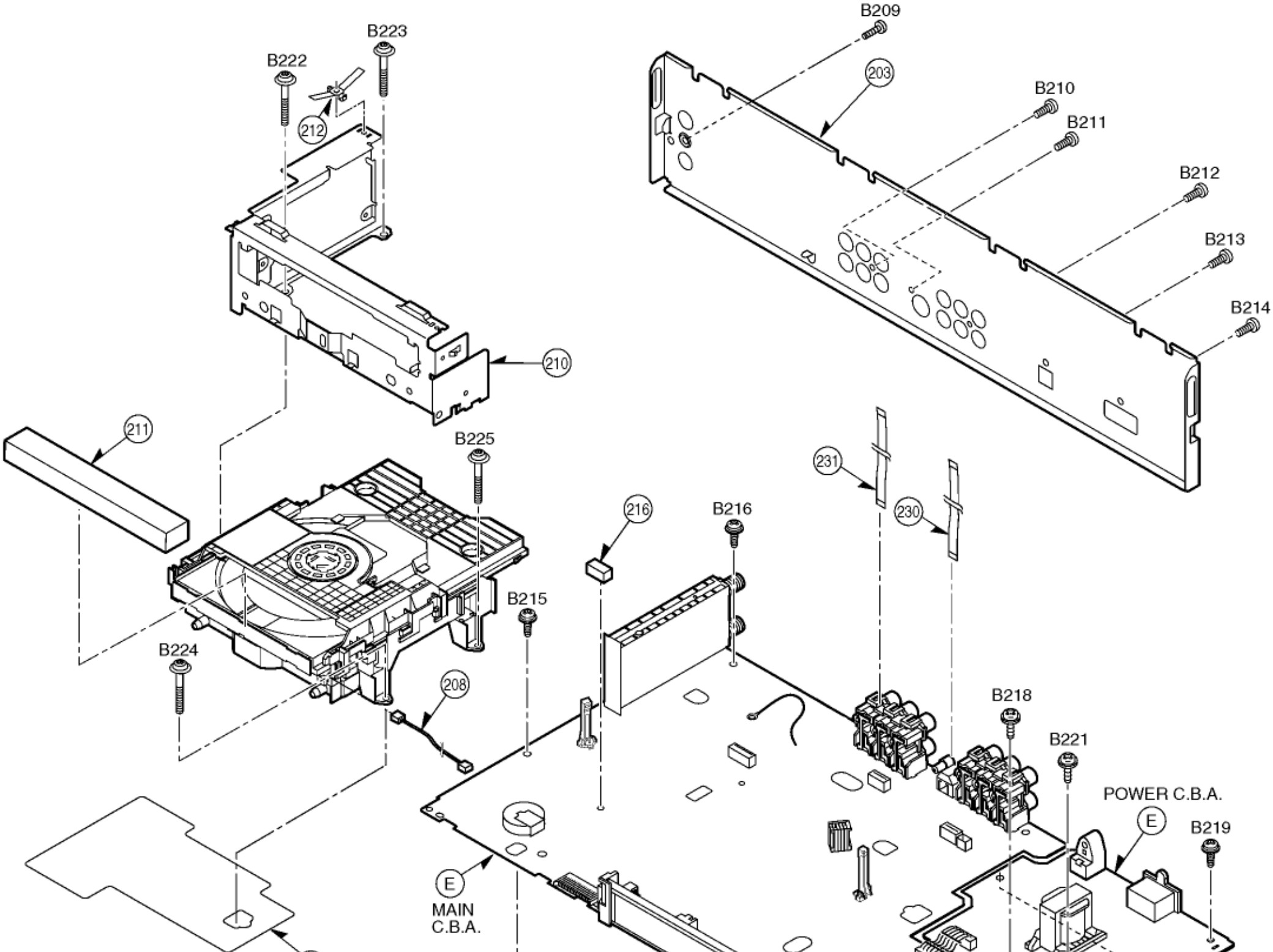

302
303
306
307
(NV-VP32GC)
305
308

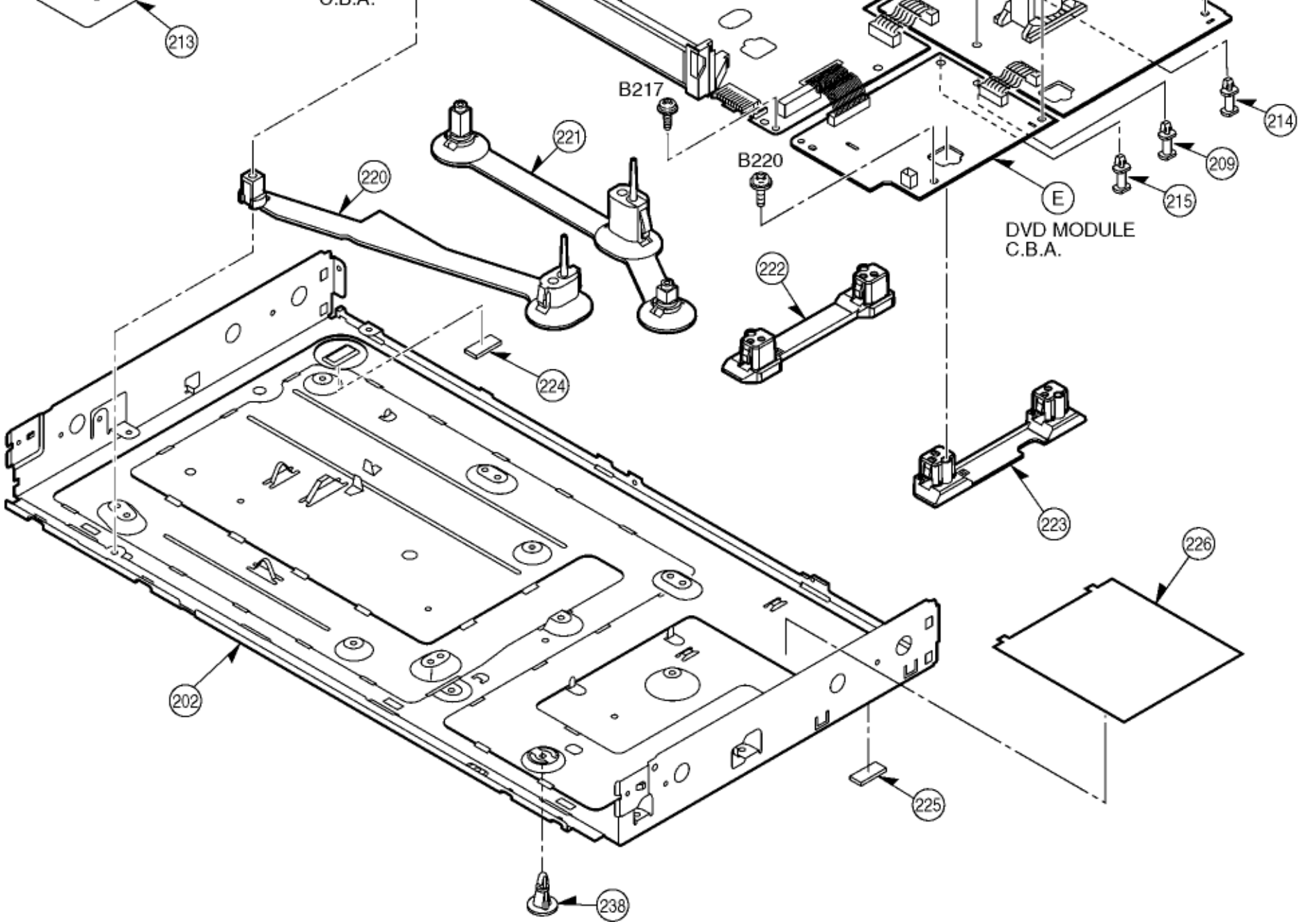

301
310

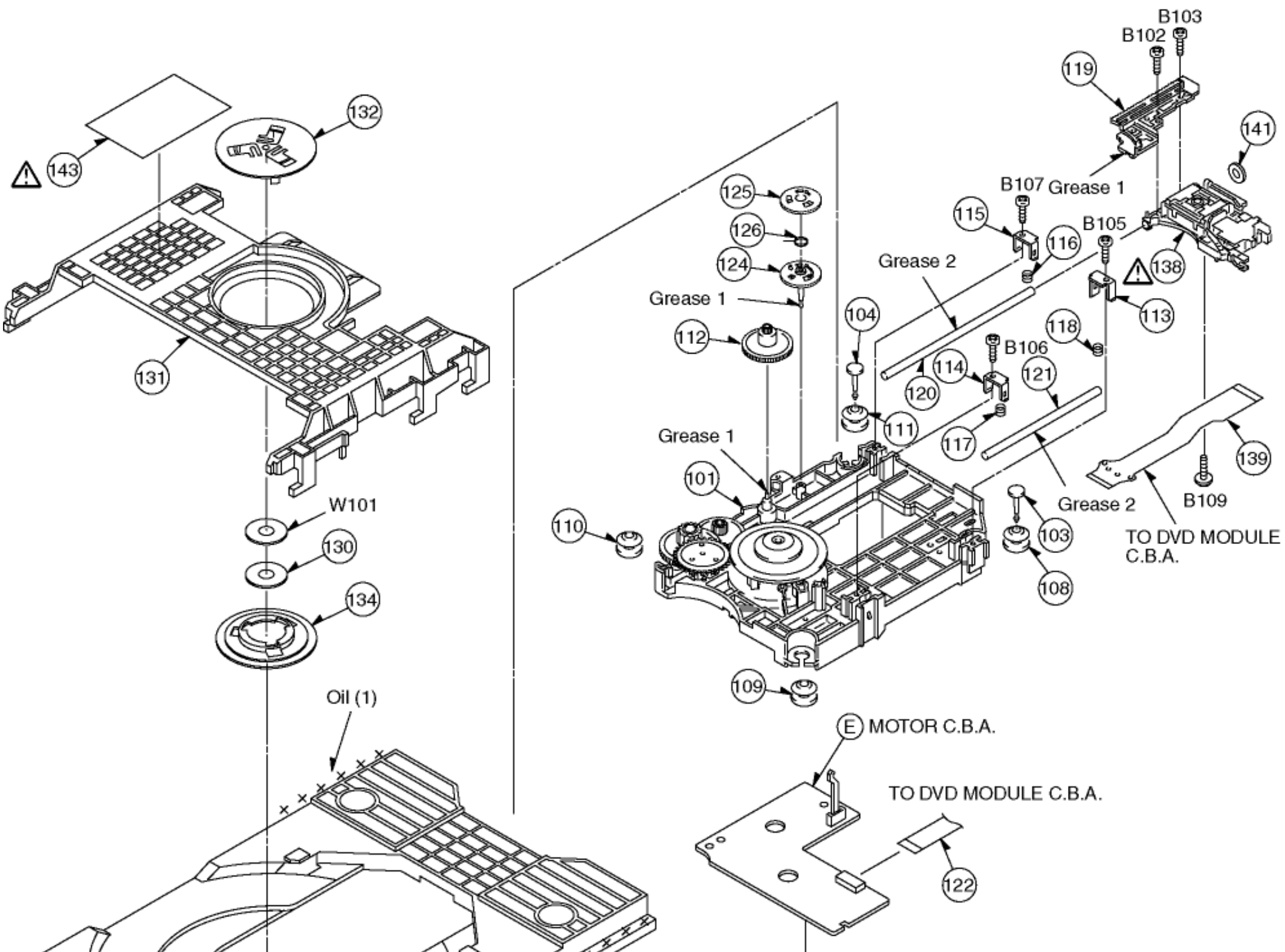

312
311
315

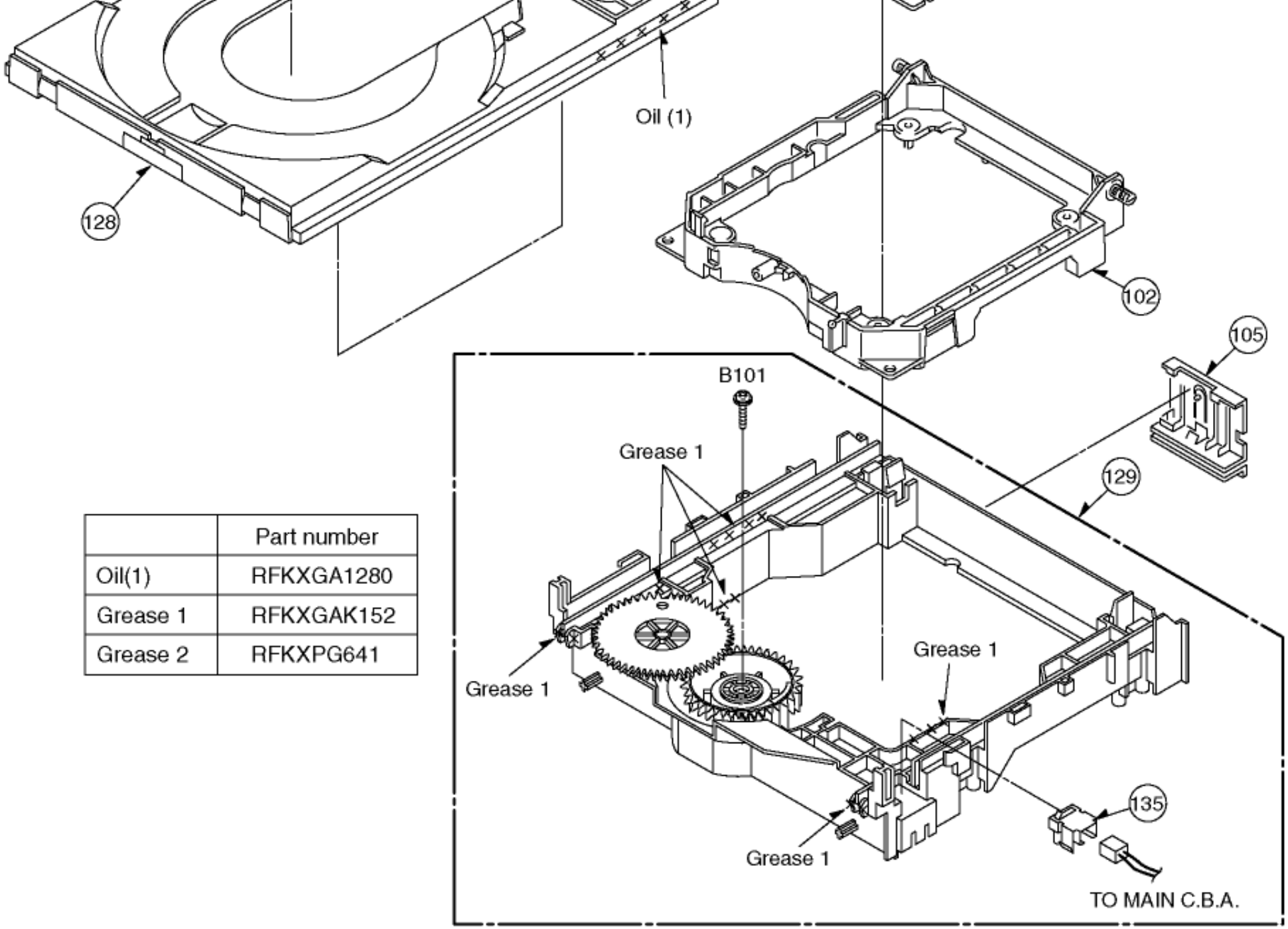

B203
201
B201
B204
B202
B229
B227
B228
B230
B231


B232
B205
B234
B206
E
FRONT
JACK C.B.A.
205
206
B207
B235
B208
E
FRONT
SW C.B.A.
204
207

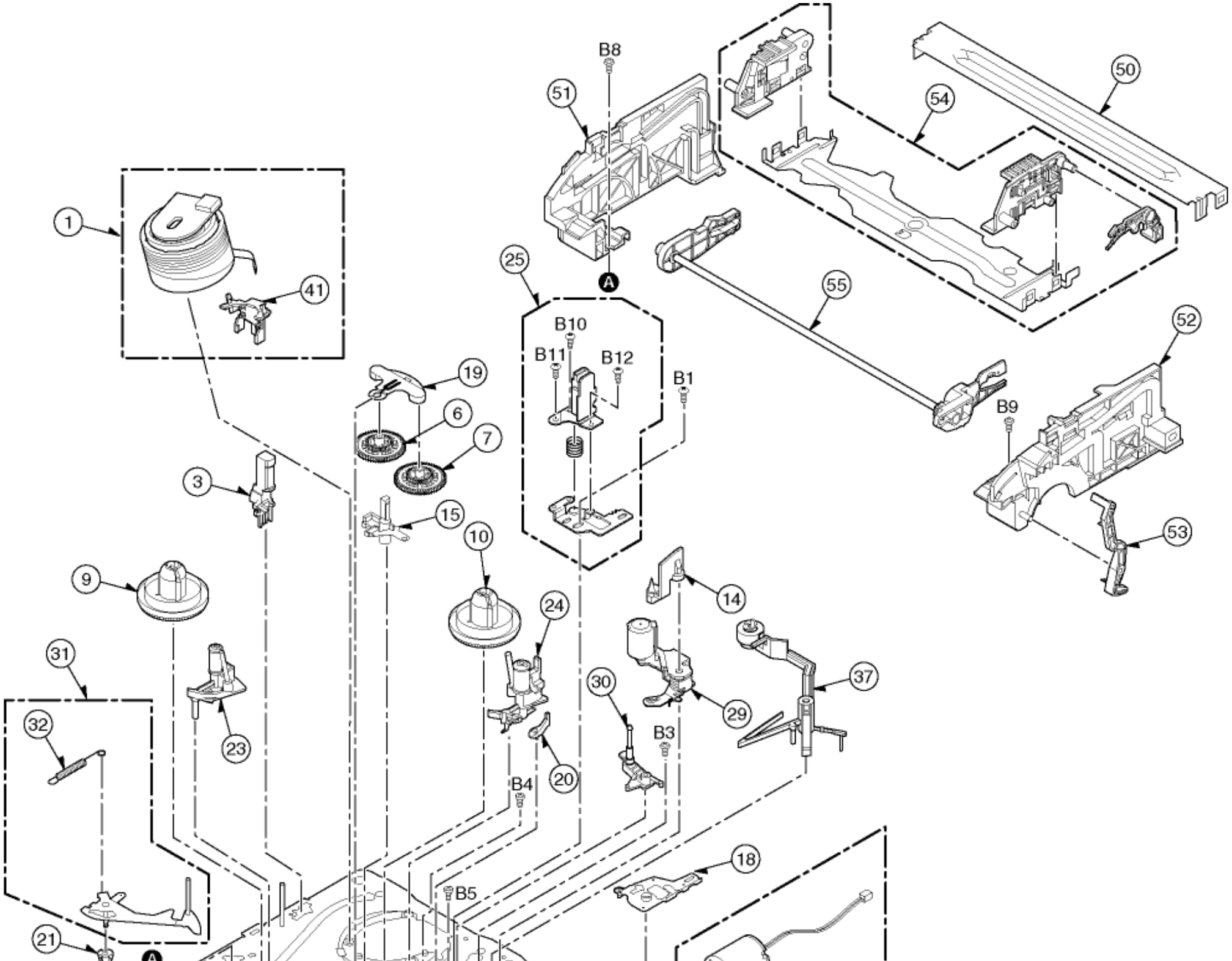

B209
203
B210
B211
B212
B213
B214
B222
B223
212
210
211
B225
231
230
216
B216
B215
B224
208
B218
B221
POWER C.B.A.
E
B219
E
MAIN
C.B.A.


213
B217
214
221
220
B220
209
215
E
DVD MODULE
C.B.A.
222
224
223
226
202
225
238


143
132
131
W101
130
134
Oil (1)
B103
B102
119
141
B107 Grease 1
115
116
B105
138
113
125
126
124
Grease 1
112
104
Grease 2
118
B106
114
120
121
111
117
Grease 1
101
110
109
103
108
Grease 2
B109
139
TO DVD MODULE C.B.A.
E MOTOR C.B.A.
TO DVD MODULE C.B.A.
122



	Part number
Oil(1)	RFKXGA1280
Grease 1	RFKXGAK152
Grease 2	RFKXPG641


B8
51
50
54
1
41
25
A
55
B10
B11
B12
B1
52
B9
19
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15
10
53
9
14
24
31
37
30
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B3
32
23
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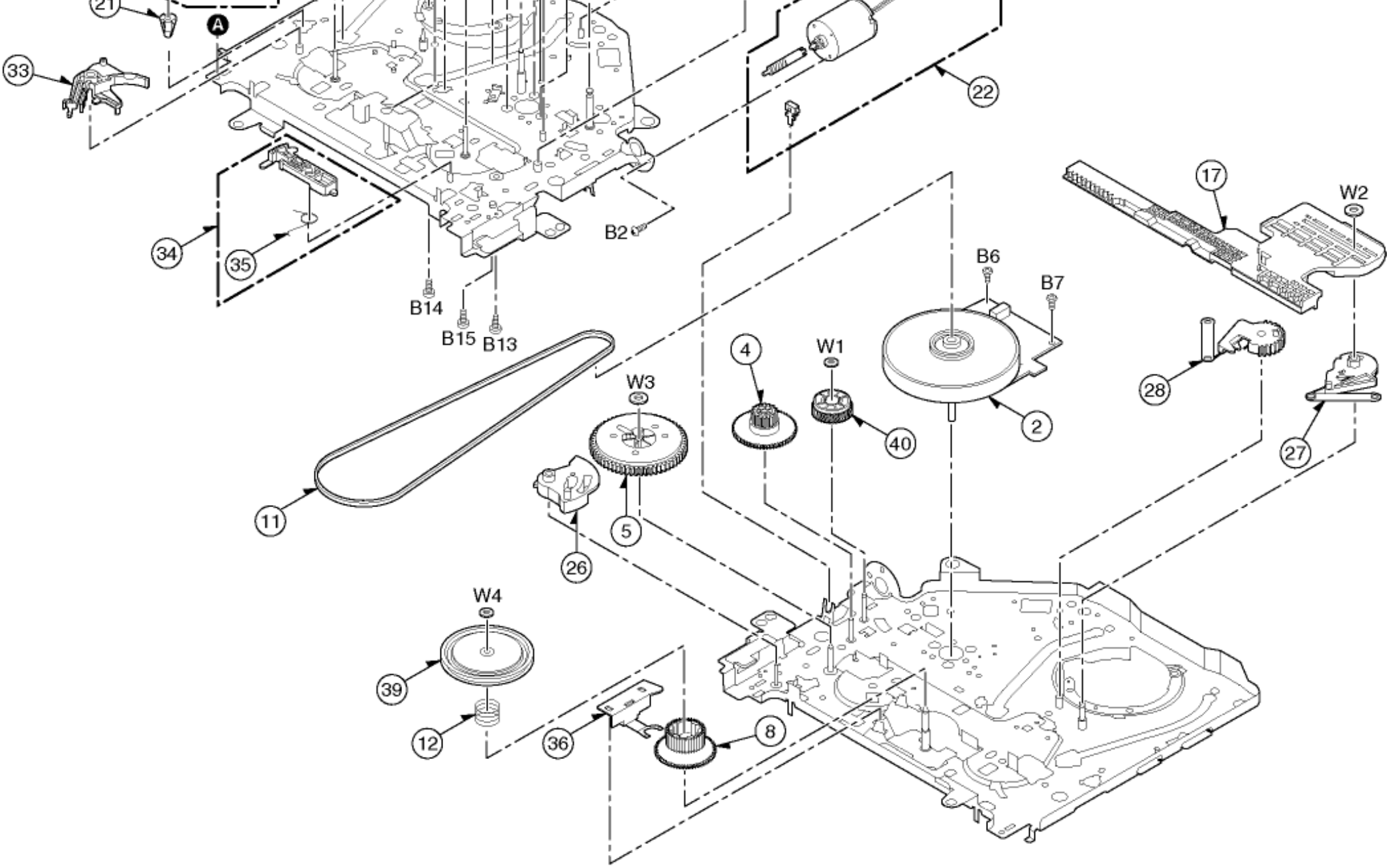
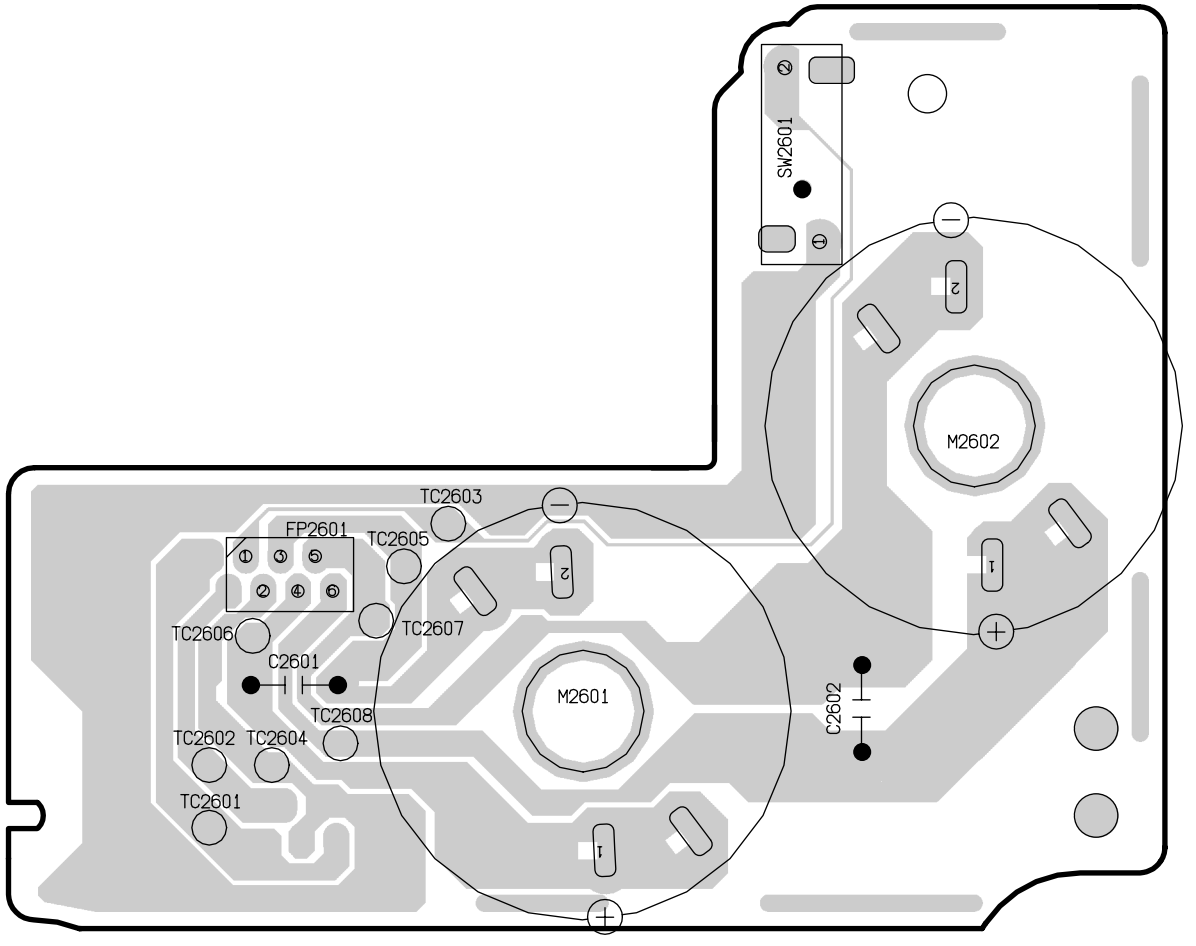
B4
18
B5
21
A


21
A
33
34
35
B2
B14
B15
B13
22
17
W2
B6
B7
4
W1
W3
40
2
28
27
11
5
26
W4
39
12
36
8

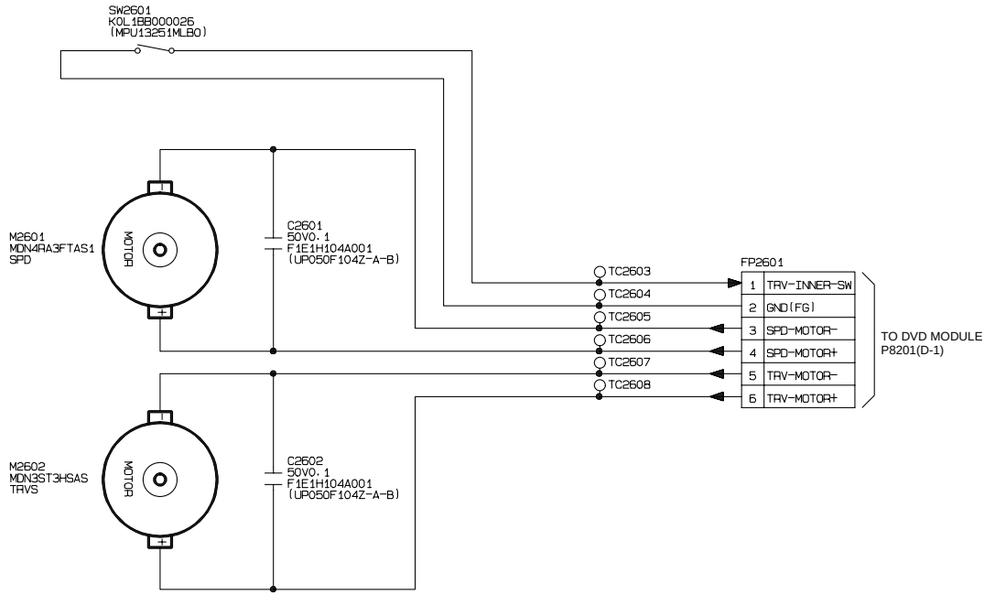
(REP3606A-C)



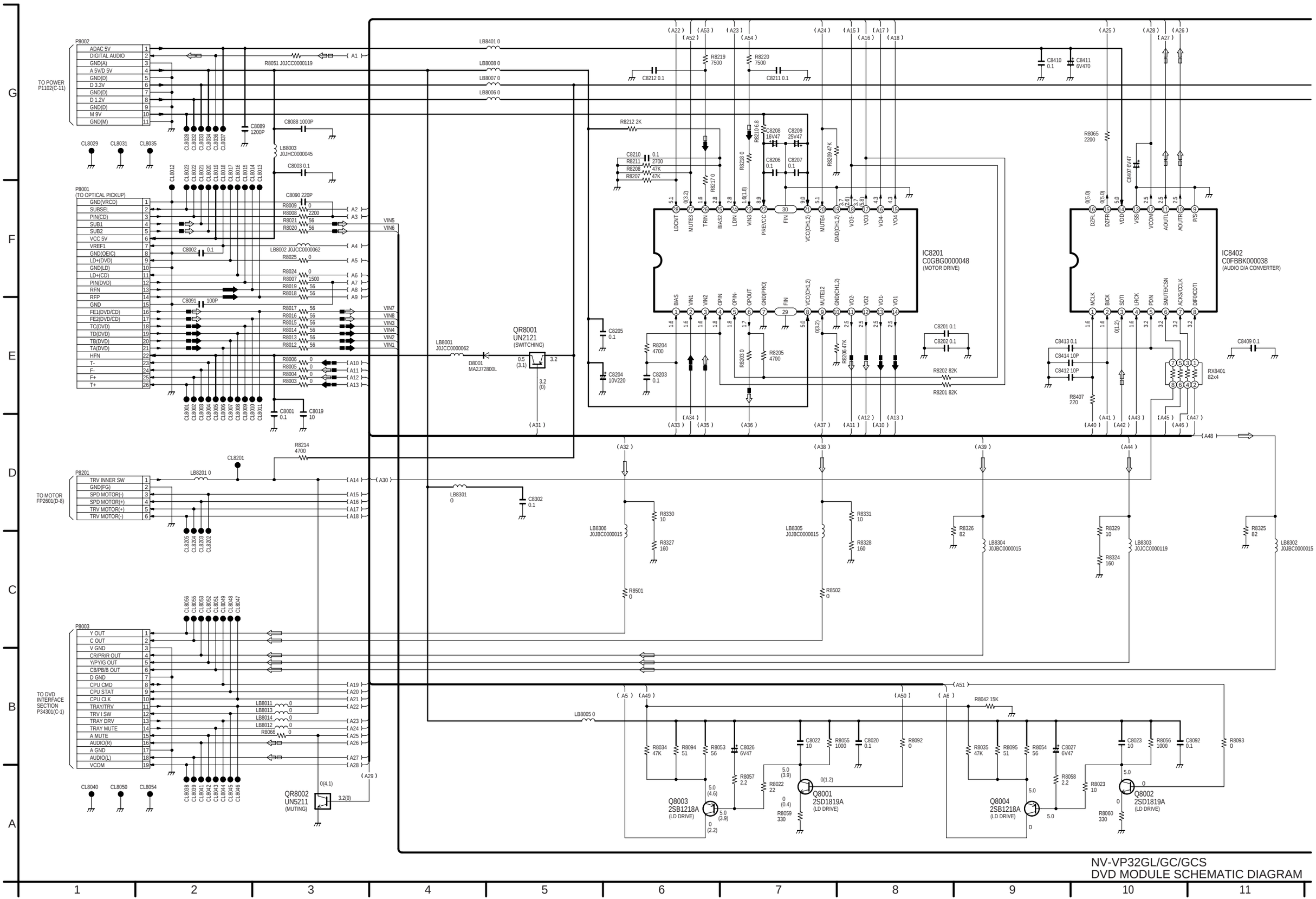
NV-VP32GL/GC/GCS
MOTOR C.B.A.

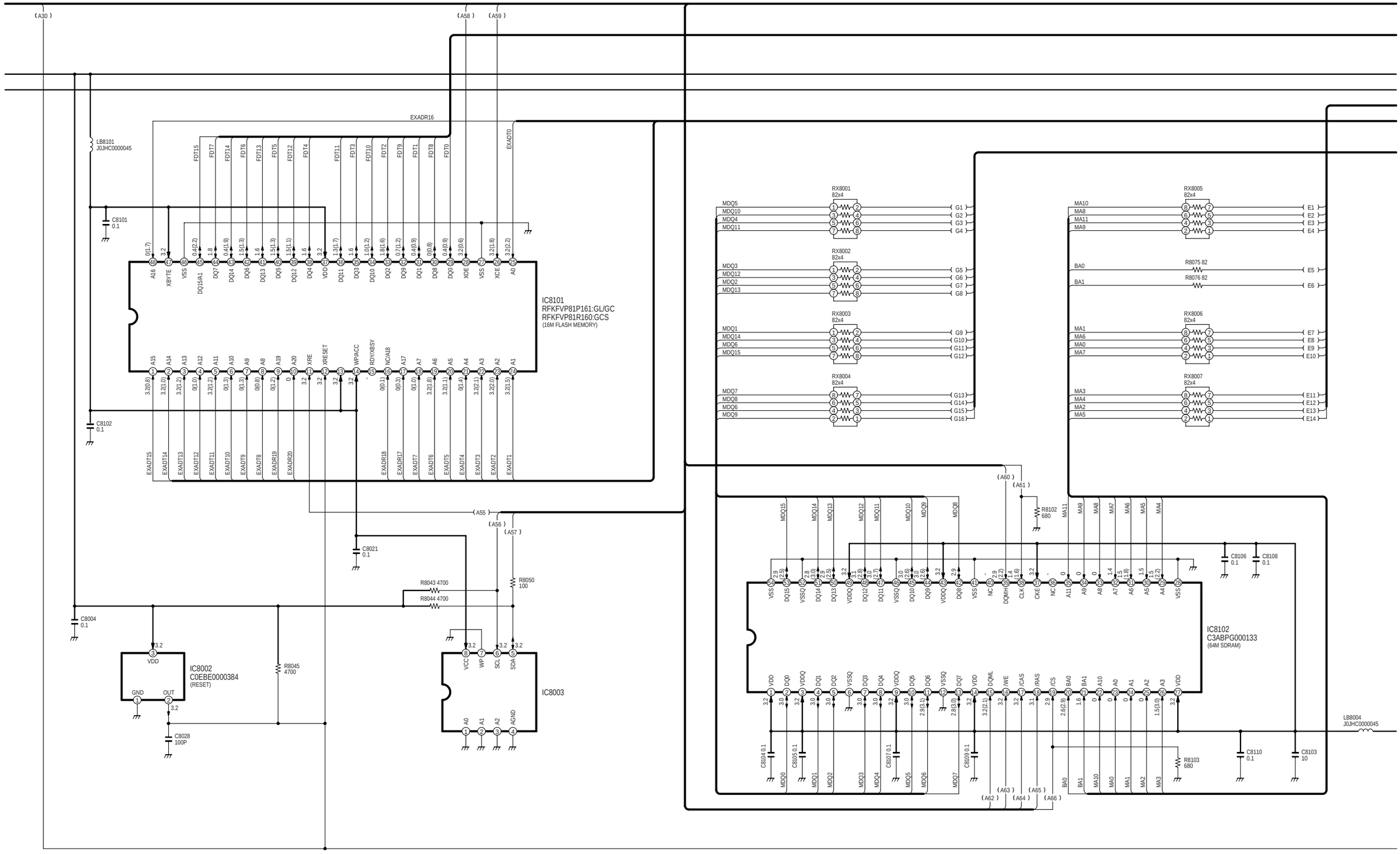
D C B A

1 2 3 4



NV-VP32GL/GC/GCS
MOTOR SCHEMATIC DIAGRAM


P8002
ADAC 5V
DIGITAL AUDIO
GND(A)
A 5V/D 5V
GND(D)
D 3.3V
GND(D)
D 1.2V
GND(D)
M 9V
GND(M)
TO POWER P1102(C-11)
P8001 (TO OPTICAL PICKUP)
GND(VRCD)
SUBSEL
PIN(CD)
SUB1
SUB2
VCC 5V
VREF1
GND(OEIC)
LD+(DVD)
GND(LD)
LD+(CD)
PIN(DVD)
RFN
RFP
GND
FE1(DVD/CD)
FE2(DVD/CD)
TC(DVD)
TD(DVD)
TB(DVD)
TA(DVD)
HFN
T-
F-
F+
T+
P8201
TRV INNER SW
GND(FG)
SPD MOTOR(-)
SPD MOTOR(+)
TRV MOTOR(+)
TRV MOTOR(-)
TO MOTOR FP2601(D-8)
P8003
Y OUT
C OUT
V GND
CR/PR/R OUT
Y/PY/G OUT
CB/PB/B OUT
D GND
CPU CMD
CPU STAT
CPU CLK
TRAY/TRV
TRV I SW
TRAY DRV
TRAY MUTE
A MUTE
AUDIO(R)
A GND
AUDIO(L)
VCOM
TO DVD INTERFACE SECTION P34301(C-1)
IC8201
C0GBGC0000048
(MOTOR DRIVE)
IC8402
C0FBBK000038
(AUDIO D/A CONVERTER)
QR8001
UN2121
(SWITCHING)
QR8002
UN5211
(MUTING)
Q8001
2SD1819A
(LD DRIVE)
Q8002
2SD1819A
(LD DRIVE)
Q8003
2SB1218A
(LD DRIVE)
Q8004
2SB1218A
(LD DRIVE)
RX8401
82x4
NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

RF SIGNAL PATH
VIDEO MAIN SIGNAL PATH
AUDIO MAIN SIGNAL PATH
MOTOR DRIVE SIGNAL PATH
TRACKING ERROR SIGNAL PATH
FOCUS ERROR SIGNAL PATH

IC8001
MN2DS0005VP
(DV LSI)

PS8004
(TEST TERMINAL FOR DEBUG)
8 GND
7 TRCST
6 TRCD(3)
5 TRCD(2)
4 TRCD(1)
3 TRCD(0)
2 GND
1 TRCCLK

PS8003
(TEST TERMINAL FOR PROGRAM)
1 DGND
2 SDATA
3 KMODE
4 EXTRG0
5 DGND
6 SCLOCK
7 DGND
8 NRESET
9 VDD
10 VDD

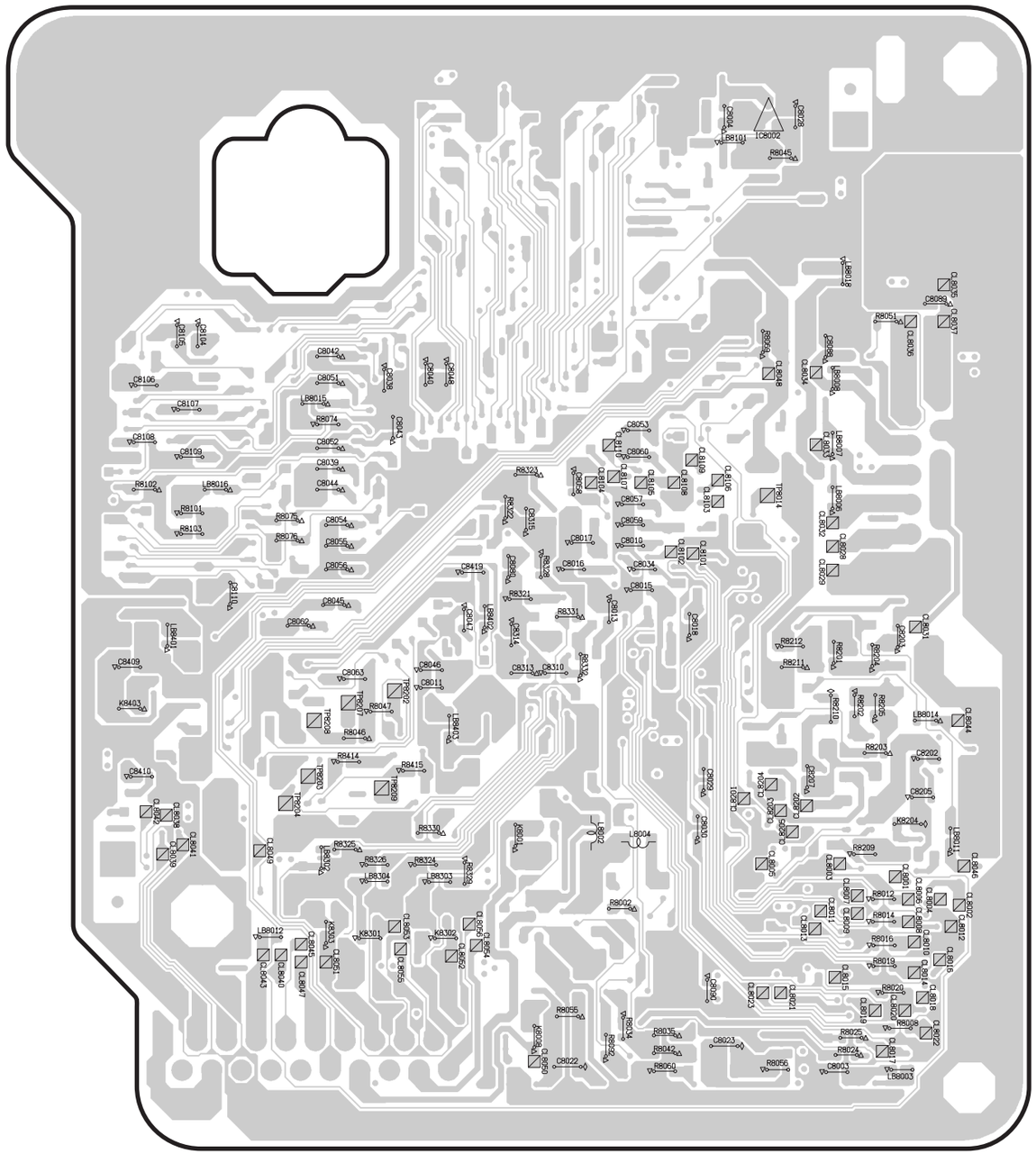
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

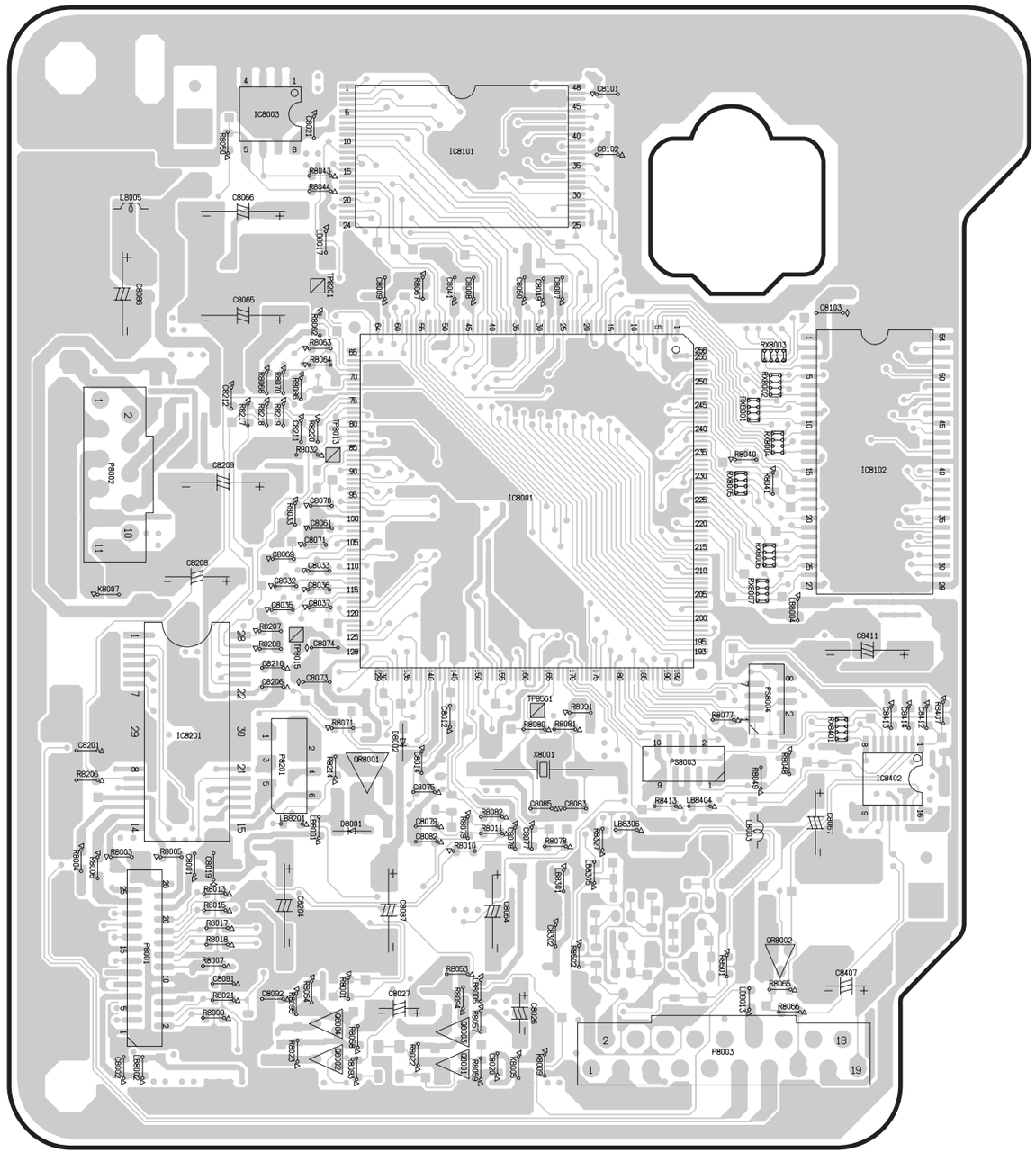
NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

(REPV0030B:NV-VP32GL/GC)(REPV0030C:NV-VP32GCS)



(FOIL SIDE)

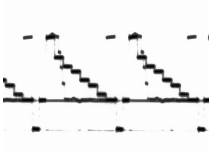
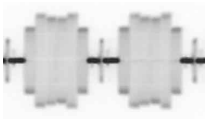
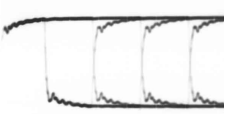
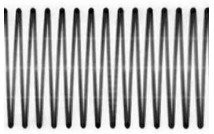
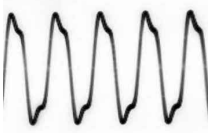
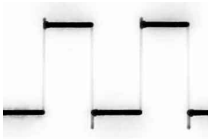
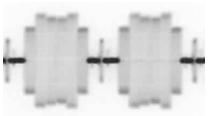
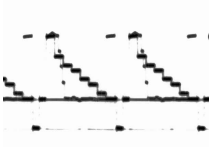
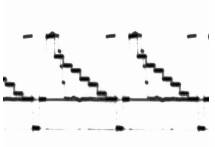
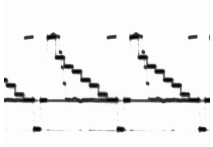
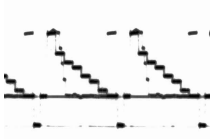
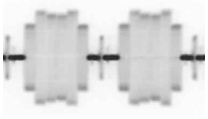
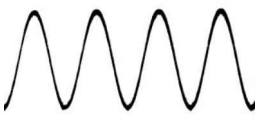


(COMPONENT SIDE)

NV-VP32GL/GC/GCS
DVD MODULE C.B.A.

DVD MODULE C.B.A.					
Transistor			**Test Point**		
Q8001	A-7	C	CL8040	B-2	F
Q8002	A-6	C	CL8041	B-2	F
Q8003	A-7	C	CL8042	B-1	F
Q8004	A-6	C	CL8043	B-2	F
Transistor & Resistor			CL8044	C-5	F
QR8001	B-7	C	CL8045	B-2	F
QR8002	B-8	C	CL8046	B-5	F
Integrated Circuit			CL8047	B-2	F
IC8001	D-7	C	CL8048	D-4	F
IC8002	E-4	F	CL8049	B-2	F
IC8003	E-6	C	CL8050	A-3	F
IC8101	E-7	C	CL8051	B-2	F
IC8102	D-9	C	CL8052	B-3	F
IC8201	C-6	C	CL8053	B-2	F
IC8402	B-9	C	CL8054	B-3	F
Test Point			CL8055	B-2	F
CL8001	B-4	F	CL8056	B-3	F
CL8002	B-5	F	CL8101	C-4	F
CL8003	B-4	F	CL8102	C-3	F
CL8004	B-5	F	CL8103	C-4	F
CL8005	B-4	F	CL8104	D-3	F
CL8006	B-4	F	CL8105	D-3	F
CL8007	B-4	F	CL8106	D-4	F
CL8008	B-4	F	CL8107	D-3	F
CL8009	B-4	F	CL8108	D-3	F
CL8010	B-4	F	CL8109	D-4	F
CL8011	B-4	F	CL8110	D-3	F
CL8012	B-5	F	CL8201	B-4	F
CL8013	B-4	F	CL8202	B-4	F
CL8014	B-4	F	CL8203	B-4	F
CL8015	B-4	F	CL8204	B-4	F
CL8016	B-5	F	CL8205	B-4	F
CL8017	A-4	F	TP8013	D-6	C
CL8018	A-4	F	TP8014	D-4	F
CL8019	A-4	F	TP8015	C-6	C
CL8020	A-4	F	TP8201	D-6	C
CL8021	B-4	F	TP8202	C-2	F
CL8022	A-4	F	TP8203	B-2	F
CL8023	B-4	F	TP8204	B-2	F
CL8028	C-4	F	TP8207	C-2	F
CL8029	C-4	F	TP8208	C-2	F
CL8031	C-4	F	TP8209	B-2	F
CL8032	C-4	F	TP8561	C-7	C
CL8033	D-4	F	**Connector**		
CL8034	D-4	F	P8001	B-6	C
CL8035	D-5	F	P8002	D-6	C
CL8036	D-4	F	P8003	A-8	C
CL8037	D-5	F	P8201	B-6	C
CL8038	B-1	F	PS8003	B-8	C
CL8039	B-1	F	PS8004	C-8	C

ADDRESS INFORMATION

IC8001-68 PLAY (DVD) 3.0Vp-p (0.1msec.div.)	IC8001-69 PLAY (DVD) 3.0Vp-p (2msec.div.)	IC8001-70 PLAY (DVD) 3.0Vp-p (2msec.div.)	 IC8001-149,156 PLAY (DVD) 0.92Vp-p (20µsec.div.)	IC8001-151 PLAY (DVD) 0.5Vp-p (20µsec.div.)
IC8001-152 PLAY (DVD) 0.5Vp-p (20µsec.div.)	 IC8001-158 PLAY (DVD) 0.6Vp-p (20µsec.div.)	 IC8001-171 PLAY (DVD) 6Vp-p (10µsec.div.)	 IC8402-1 PLAY (DVD) 0.7Vp-p (50nsec.div.)	 IC8402-2 PLAY (DVD) 4.2Vp-p (0.2µsec.div.)
 IC8402-4 PLAY (DVD) 3.5Vp-p (5µsec.div.)	IC8402-10,11 PLAY (DVD) 0.3Vp-p (0.5msec.div.)	 IC33501-2 PLAY (DVD) 0.68Vp-p (20µsec.div.)	 IC33501-6 PLAY (DVD) 1.0Vp-p (20µsec.div.)	 IC33501-12 PLAY (DVD) 1.0Vp-p (20µsec.div.)
IC33501-14 PLAY (DVD) 0.48Vp-p (20µsec.div.)	IC33501-16 PLAY (DVD) 0.48Vp-p (20µsec.div.)	IC33501-18 PLAY (DVD) 1.0Vp-p (20µsec.div.)	IC33501-21 PLAY (DVD) 1.0Vp-p (20µsec.div.)	 IC33501-24 PLAY (DVD) 2.0Vp-p (20µsec.div.)
 IC33501-27 PLAY (DVD) 2.0Vp-p (20µsec.div.)	IC33501-30 PLAY (DVD) 2.0Vp-p (20µsec.div.)	 IC33501-32 PLAY (DVD) 1.4Vp-p (20µsec.div.)	 IC34301-1,7 PLAY (DVD) 1.0Vp-p (0.5msec.div.)	IC34301-3,5 PLAY (DVD) 0.3Vp-p (0.5msec.div.)

VCR VIDEO MAIN SIGNAL PATH IN REC MODE
VCR AUDIO MAIN SIGNAL PATH IN REC MODE
DVD VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
DVD AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

(P) :TO POWER SUPPLY/RF SECTION
(T) :TO TIMER SECTION
(V) :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
(A) :TO Hi-Fi AUDIO SECTION

IC33501
AN13330A-VF

IC34301
NJM4558M

QR34419 UN5215 (MUTE)
QR34410 UN5215 (MUTE)
QR34304 UN2111 (BUFFER)
QR34303 UN2211 (INV.)
Q34302 2SD601A (SWITCHING)

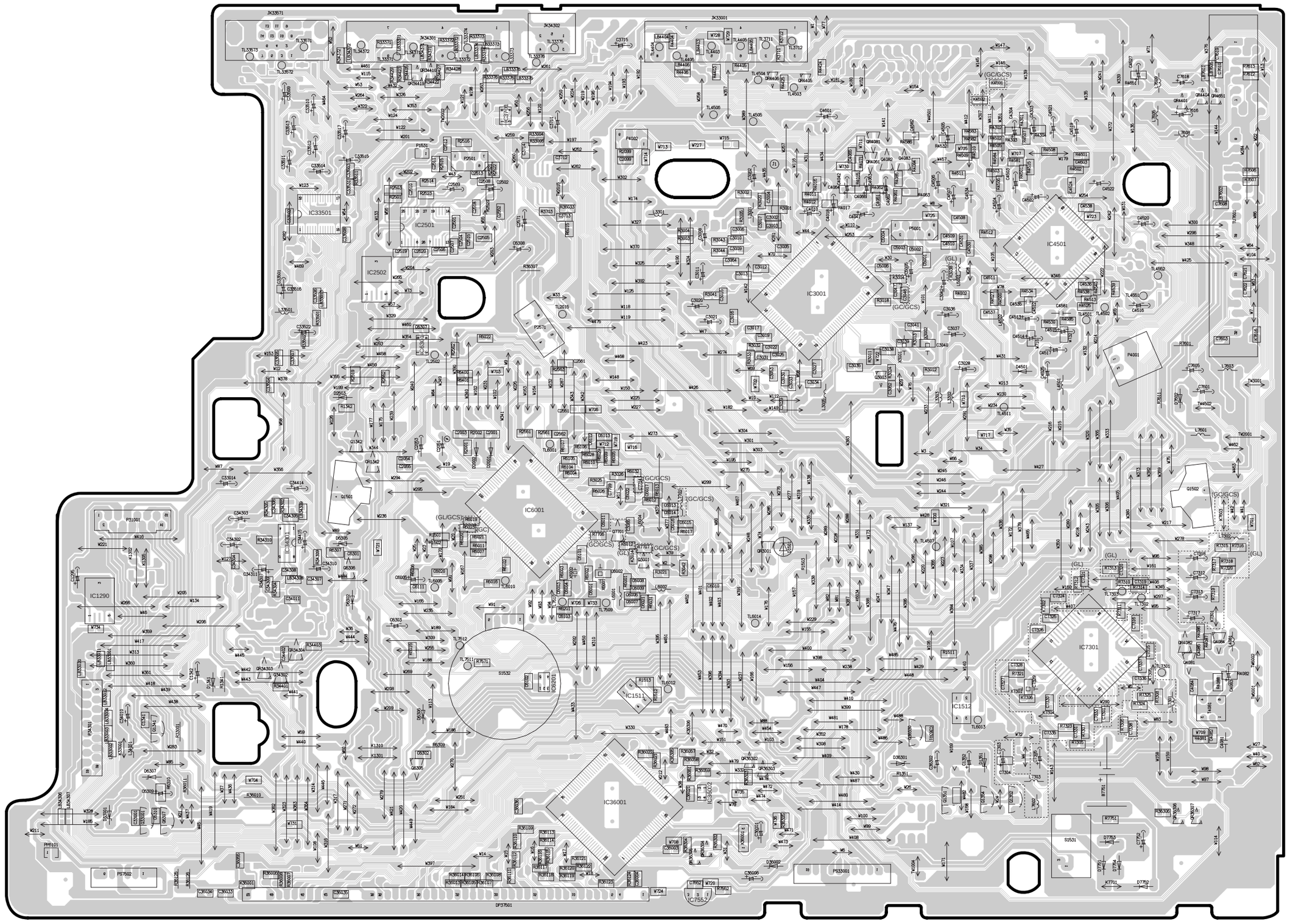
DVD OUT JK34301 K2HA612B0052
DVD S VIDEO OUT JK34302 K1CB105B0042

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
DVD INTERFACE SECTION SCHEMATIC DIAGRAM

(VEPV0008C:NV-VP32GL)(VEPV0008E:NV-VP32GC)(VEPV0008F:NV-VP32GCS)



NV-VP32GL/GC/GCS
MAIN C.B.A.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

MAIN C.B.A.

Transistor	
Q1341	B-2
Q1342	D-3
Q1351	A-6
Q1352	A-7
Q1354	A-7
Q1501	C-3
Q1502	C-8
Q3001	C-5
Q3003	D-6
Q3702	F-4
Q4081	B-8
Q4082	B-8
Q4083	E-6
Q4084	B-8
Q6305	B-3
Q6306	C-3
Q6307	A-2
Q7701	C-4
Q33001	A-2
Q34003	C-3
Q34004	C-2
Q34302	B-2
Q36330	B-6
Transistor & Resistor	
QR1342	C-3
QR3001	C-5
QR3006	E-5
QR3008	C-5
QR4061	E-6
QR4081	E-6
QR4082	B-8
QR4401	F-8
QR4404	F-8
QR4405	F-6
QR4406	F-5
QR4651	F-8
QR34303	B-2
QR34304	B-2
QR34410	F-3
QR34419	F-3
QR36302	B-5
QR36303	B-5
QR36304	A-5
QR36305	A-5
QR36306	A-8
QR36307	A-8
Integrated Circuit	
IC1290	C-1
IC1511	B-5
IC1512	B-6
IC2501	E-3
IC2502	E-3
IC3001	D-6
IC3701	E-4
IC3703	E-4
IC4501	E-7
IC6001	C-4
IC6201	B-4
IC6301	D-3
IC7301	B-7
IC7552	A-5
IC33501	E-3
IC34301	C-2
IC36001	A-4
IC36002	A-5

Test Point	
TL2015	D-4
TL2502	D-3
TL3711	F-5
TL3712	F-5
TL4403	F-5
TL4404	F-5
TL4405	F-5
TL4406	F-5
TL4501	D-7
TL4502	D-7
TL4503	F-5
TL4504	F-5
TL4505	E-5
TL4506	E-5
TL4507	C-6
TL4511	D-7
TL4551	D-8
TL4552	D-8
TL6001	D-4
TL6005	C-3
TL6010	C-4
TL6012	B-5
TL6013	B-7
TL6014	B-5
TL7301	B-8
TL7302	C-8
TL7303	C-7
TL7509	C-4
TL7510	C-4
TL7511	B-4
TL7512	B-3
TL33371	F-3
TL33372	F-3
TL33374	F-4
TL33375	F-4
TL33376	F-4
TL33571	F-3
TL33572	F-2
TL33573	F-2
TL34371	F-3
TL34372	F-3
TW1004	A-6
TW2001	D-8
TW2002	E-3
TW2015	E-4
TW3001	D-8
TW4501	E-6
TW4502	D-8
TW6001	B-8
TW6002	B-8
Connector	
P1531	E-3
P2501	E-4
P2571	D-4
P3002	F-6
P4001	D-7
P4002	E-4
P5001	E-6
P31001	C-2
P34301	B-1
PP6101	A-1
PS33001	A-6
PS7502	A-1
TU7601	E-8

ADDRESS INFORMATION

Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓣ :TO TIMER SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓘ :TO DVD INTERFACE SECTION
Ⓓ :TO DECODER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

TU7601
ENG57820G1:GL
ENG57818G1:GC/GCS

TO POWER P1103(B-11)

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

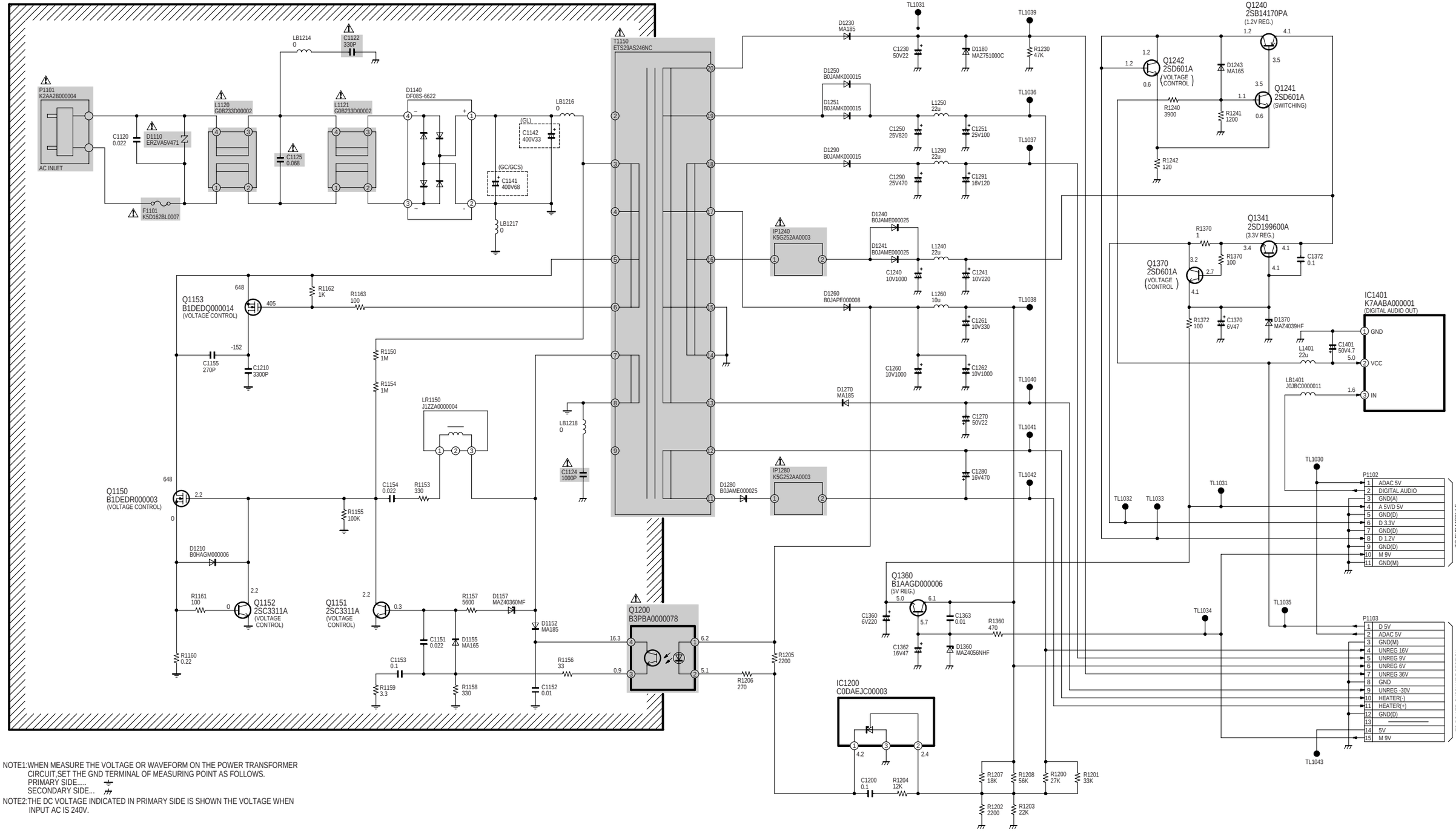
NV-VP32GL/GC/GCS
POWER SUPPLY/RF SECTION
SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.

PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

HOT



NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚

NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

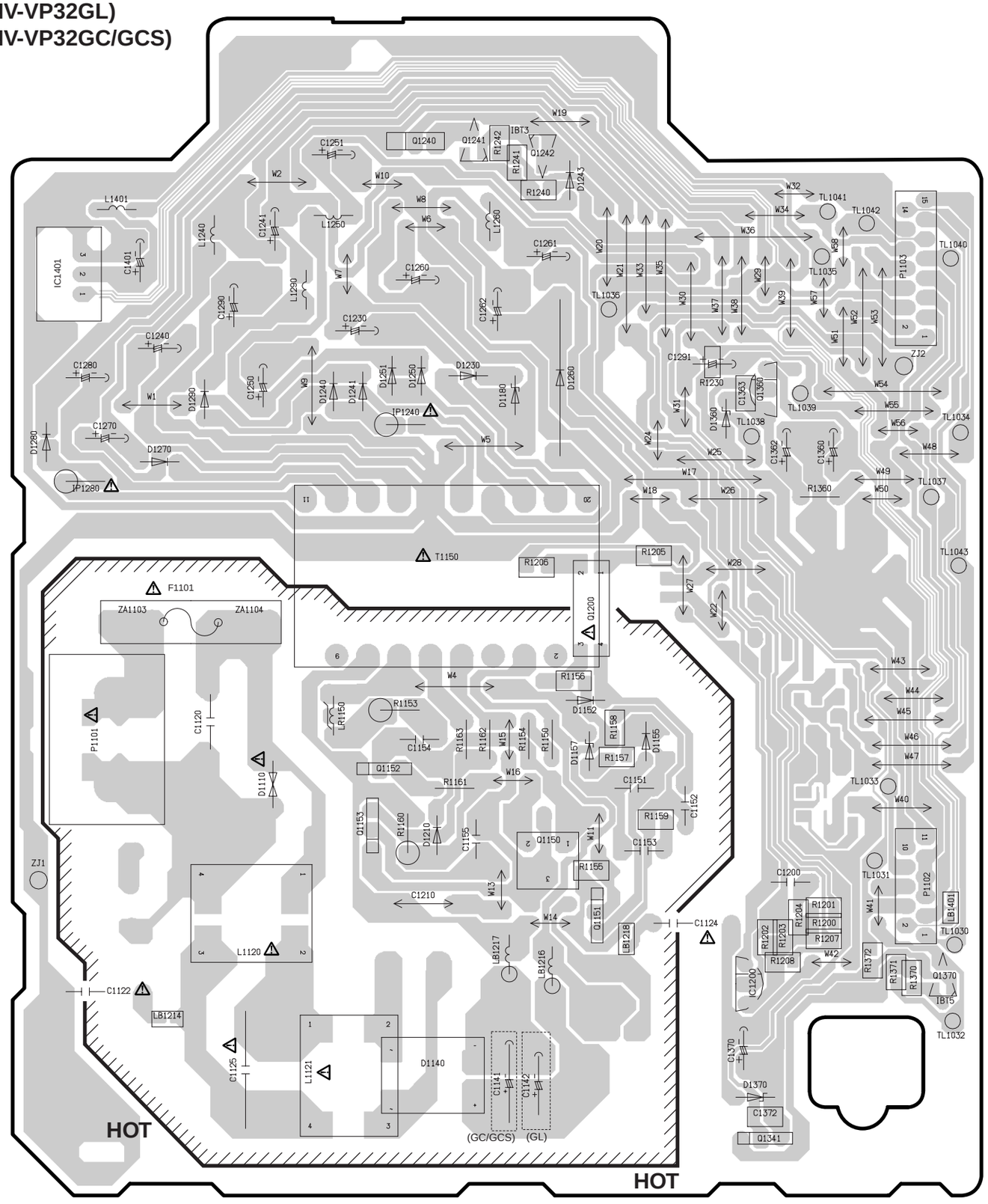
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS POWER SCHEMATIC DIAGRAM

(VEPV0012A:NV-VP32GL)
(VEPV0012B:NV-VP32GC/GCS)



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CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
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POWER C.B.A.			
Transistor		**Test Point**	
Q1150	B-4	TL1030	B-6
Q1151	B-4	TL1031	B-6
Q1152	C-3	TL1032	B-6
Q1153	C-3	TL1033	C-6
Q1200	D-4	TL1034	D-6
Q1240	F-3	TL1035	E-5
Q1241	F-4	TL1036	E-4
Q1242	F-4	TL1037	D-6
Q1341	A-5	TL1038	D-5
Q1360	E-5	TL1039	E-5
Q1370	B-6	TL1040	E-6
Integrated Circuit		TL1041	E-5
IC1200	B-5	TL1042	E-6
IC1401	E-2	TL1043	D-6
		Connector	
		P1101	C-2
		P1102	B-6
		P1103	E-6

ADDRESS INFORMATION

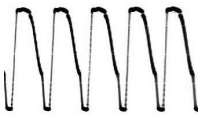
NV-VP32GL/GC/GCS
POWER C.B.A.

T1150-3 STOP
3.8Vp-p (2msec.div.)

T1150-5 STOP
560Vp-p (5usec.div.)

T1150-7 STOP
33Vp-p (5usec.div.)

T1150-13 STOP
76Vp-p (5usec.div.)

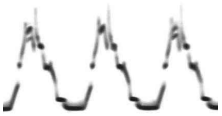


T1150-17 STOP
18Vp-p (5usec.div.)

T1150-19 STOP
40Vp-p (5usec.div.)

T1150-20 STOP
100Vp-p (5usec.div.)

Q1200-1 STOP
0.4Vp-p (5usec.div.)



IC2501-22,23,25 PLAY
7.0Vp-p (2msec.div.)

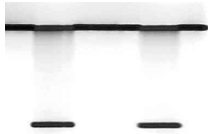
IC6001-13 STILL
5.0Vp-p (5msec.div.)

IC6001-18 REC
5.0Vp-p (10msec.div.)

IC6001-50 REC/PLAY
2.0Vp-p (20usec.div.)

IC6001-52 REC/PLAY
2.0Vp-p (20usec.div.)

IC6001-68,69 REC
5.0Vp-p (5msec.div.)

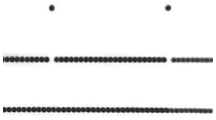


IC6001-70 REC
5.0Vp-p (5msec.div.)

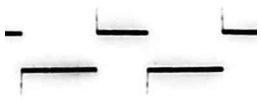
IC6001-71 REC
5.0Vp-p (5usec.div.)

IC6001-72 REC
5.0Vp-p (5msec.div.)

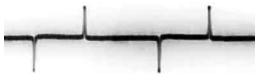
IC6001-79,80 FF/REW
5.0Vp-p (1msec.div.)



IC6001-90 REC
5.0Vp-p (10msec.div.)



IC6001-94,95 REC
6.8Vp-p (10msec.div.)



IC6001-97 PLAY
0.8Vp-p (10msec.div.)

IC3001-6 REC/PLAY
0.8Vp-p (0.5msec.div.)

IC3001-17,21 REC
1.0Vp-p (20µsec.div.)

IC3001-26 REC
0.5Vp-p (20µsec.div.)

IC3001-29 REC/PLAY
2.2Vp-p (20µsec.div.)

IC3001-45,46 PLAY
0.42Vp-p (20µsec.div.)

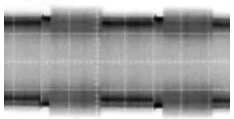
IC3001-49 PLAY
0.58Vp-p (20µsec.div.)

IC3001-73 REC/PLAY
5.0Vp-p (5msec.div.)

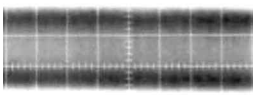
IC3001-74 REC/PLAY
5.0Vp-p (5msec.div.)

IC3001-80 REC/PLAY
0.5Vp-p (10msec.div.)

IC3001-85 PLAY
180mVp-p (20µsec.div.)

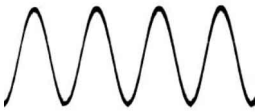


IC3001-86 REC
1.4Vp-p (5msec.div.)

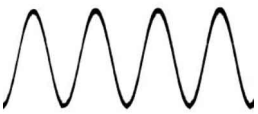


IC3001-87 PLAY
150mVp-p (20µsec.div.)

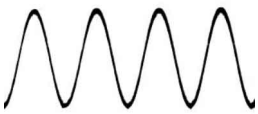
IC3001-96 PLAY
5.0Vp-p (5msec.div.)



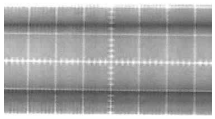
IC3001-98 REC
1.4Vp-p (0.5msec.div.)



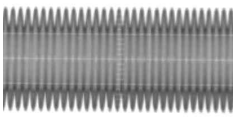
IC4501-2,4 REC
0.4Vp-p (0.5msec.div.)



IC4501-9,14 REC
0.4Vp-p (0.5msec.div.)

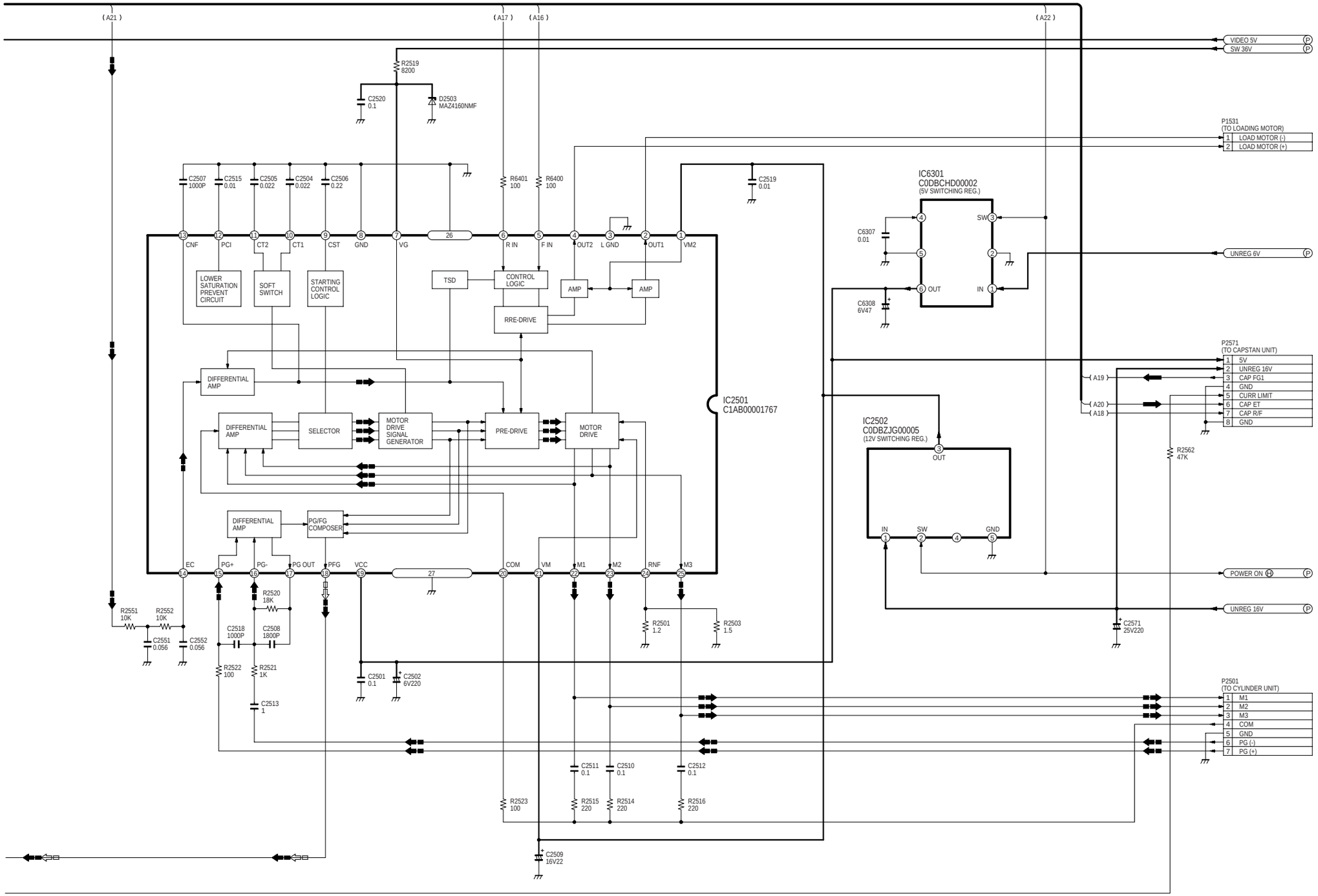


IC4501-21 REC
1.4Vp-p (20usec.div.)



IC4501-22,24 PLAY
1.4Vp-p (20usec.div.)

IC4501-53,57 REC/PLAY
1.8Vp-p (0.5msec.div.)



NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓣ :TO TIMER SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓓ :TO DECODER SECTION

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP

IC1511
B3NAA0000049
(T-REEL SENSOR)

IC1512
B3NAA0000049
(S-REEL SENSOR)

IC6201
C0EBH0000172
(RESET)

IC7552
PNA4618M09VT
(IR RECEIVER)

IC6001
C2CBHF000349:GL
C2CBHF000346:GC/GCS

Q1501
PNA2604M01
(T-PHOTO)

Q1502
PNA2604M01
(S-PHOTO)

SENSOR
D1501
B3EA00000072

Q7701
2SB709A
(AMP)

MODE SW
S1532
K0ZZ00000598

SAFETY TAB
S1531
K0C111A00006

NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

Ref. No.	IC1511					IC1512														
MODE	1	2	3	4		1	2	3	4											
STOP	1.2	2.4	5.0	0.0		0.0	1.3	5.0	0.0											
PLAY	1.2	2.4	3.5	0.0		0.0	1.3	5.0	0.0											
REC	1.2	2.4	3.5	0.0		0.0	1.3	4.9	0.0											
F.F	1.2	2.4	2.4	0.0		0.0	1.3	2.5	0.0											
REW	1.2	2.4	2.3	0.0		0.0	1.3	2.4	0.0											
Ref. No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	12.2	0.3	0.0	0.3	0.0	0.0	16.2	0.0	2.9	1.7	1.6	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.5
PLAY	12.3	0.3	0.0	0.3	0.0	0.0	16.3	0.0	2.8	1.7	1.7	0.7	1.4	2.4	2.5	2.5	2.5	1.3	5.0	3.6
REC	12.2	0.3	0.0	0.3	0.0	0.0	16.3	0.0	2.9	1.6	1.7	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.5
F.F	12.2	0.3	0.0	0.3	0.0	0.0	16.2	0.0	2.9	1.7	1.7	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.5
REW	12.3	0.3	0.0	0.3	0.0	0.0	16.2	0.0	2.8	1.7	1.7	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3..9
Ref. No.	IC2501																			
MODE	21	22	23	24	25															
STOP	12.2	3.5	3.5	0.0	3.5															
PLAY	12.3	3.6	3.6	0.0	3.6															
REC	12.2	3.6	3.5	0.0	3.6															
F.F	12.3	3.5	3.5	0.0	3.5															
REW	12.3	3.6	3.8	0.0	3.6															
Ref. No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	0.0	0.0	0.0	5.1	3.0	0.0	0.0	2.5	0.0	0.0
PLAY	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	4.0	4.9	4.9	0.0	0.0	5.1	3.0	0.0	0.0	2.5	2.5	0.0
REC	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	4.9	0.0	0.0	5.1	3.0	0.0	0.0	2.5	0.0	4.9
F.F	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	4.9	4.9	0.0	5.1	3.0	0.0	0.0	2.5	0.0	0.0
REW	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	4.9	4.9	0.0	5.1	3.0	0.0	0.0	2.5	0.0	0.0
Ref. No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	0.0	4.9	4.9	4.9	4.9	-	-	4.9	-	-	0.0
PLAY	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	0.0	4.9	4.9	0.0	5.0	-	-	5.0	-	-	0.0
REC	4.9	0.0	4.4	2.0	0.0	4.9	0.0	0.1	4.9	0.0	4.9	4.9	0.0	4.9	-	-	4.9	-	-	0.0
F.F	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	4.9	4.9	0.0	0.0	4.9	-	-	4.9	-	-	0.0
REW	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	4.9	4.9	0.0	0.0	4.9	-	-	4.9	-	-	0.0
Ref. No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.1	2.1	3.3	2.0	0.0	0.0	0.0	0.0
PLAY	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	4.9	1.7	5.2	2.1	1.6	2.0	0.0	0.0	0.0	0.0
REC	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.1	2.1	2.8	2.0	0.0	0.0	0.0	0.0
F.F	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.2	2.1	3.2	2.0	0.0	0.0	0.0	0.0
REW	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.2	2.1	3.4	2.0	0.0	0.0	0.0	0.0
Ref. No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.3	4.6	4.0	3.9	0.0	0.0	4.9	0.0	2.4	5.1	5.0	0.2
PLAY	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.2	4.6	4.0	3.9	0.0	0.0	4.9	2.5	2.4	5.2	0.1	4.2
REC	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.2	4.6	4.0	3.9	0.0	0.0	4.9	2.5	2.4	5.1	3.8	5.0
F.F	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.3	4.6	4.0	3.9	0.0	0.0	4.9	2.8	2.4	5.1	2.4	2.4
REW	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.3	4.6	4.0	3.9	0.0	0.0	4.9	4.9	2.4	5.1	2.4	2.4
Ref. No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.5	2.5	5.1	5.1	2.5
PLAY	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.6	2.6	5.1	5.2	2.5
REC	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.3	2.7	2.5	2.5	5.1	5.1	2.5
F.F	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.6	2.5	5.1	5.1	2.5
REW	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.6	2.7	5.2	5.2	2.5

Ref. No.	IC6201						IC6301							IC7552						
MODE	1	2	3	4	5		1	2	3	4	5	6		1	2	3				
STOP	5.1	5.1	0.0	-	-		6.1	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
PLAY	5.2	5.1	0.0	-	-		6.1	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
REC	5.1	5.1	0.0	-	-		6.0	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
F.F	5.2	5.2	0.0	-	-		6.5	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
REW	5.1	5.2	0.0	-	-		6.3	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

Ref. No.	Q1501				Q1502				Q7701											
MODE	+	–			+	–			E	C	B									
STOP	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
PLAY	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
REC	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
F.F	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
REW	4.9	0.0			5.1	0.0			2.3	0.0	1.7									

NOTE:Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point,because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓘ :TO DVD INTERFACE SECTION
Ⓓ :TO DECODER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

AV1 IN
VHS/DVD OUT
JK33001
K2HA306B0001
AUDIO IN(R)
AUDIO OUT(R)
AUDIO IN(L)
AUDIO OUT(L)
VIDEO IN
VIDEO OUT

Ⓢ IIC CLOCK
Ⓢ IIC DATA
Ⓢ FM MUTE (H)
Ⓢ HEAD SW
Ⓢ MESECAM (H)
Ⓢ TRACKING ENV.
Ⓘ DVD VIDEO OUT
Ⓢ VIDEO OUT
Ⓢ DVD OUT (H)

Ⓟ RFC VIDEO OUT
Ⓐ AUDIO IN(R)
Ⓐ AUDIO OUT(R)
Ⓐ AUDIO IN(L)
Ⓐ AUDIO OUT(L)

TL4406 TL4404 TL4405 TL4403 TL3712 TL3711
LB4406 0 LB4404 0 LB4405 0 LB4403 0
R4406 0 R4404 470 R4405 0 R4403 470
R3711 75
C3715 6V470
R3712 75

C3713 1
C3714 1
R3703 1M
IC3701
C1AB00001935
R36033 0
C3712 0.1
C3711 6V100

L5001 68u
C5006 0.1
C5005 6V100

(GC/GCS)
C3047 0.1
(GL)
R3038 2200
C3046 1
(GC/GCS)

R3018 15K
R4002 10K
TW3001
C3042 50V4.7
B-Y INVERT
COME
CR DET
MESECAM DET
TANK
COLOR LEVEL DETECTOR
DET
DET
ENVDET
HPF

C5001 0.01
C5002 0.01
C5003 0.01
C5004 0.01
SP2
SP1
VCA
CH2
CH1
REC MUTE
EXT
INT
SP

P4002
(TO A/C HEAD)
AUDIO ERASE IN 1
GND 2
AUDIO HEAD(R) 3
AUDIO HEAD(W) 4
CTL HEAD(-) 5
CTL HEAD(+) 6
Ⓢ CTL HEAD (+)
Ⓢ CTL HEAD (-)

R4081 10K
C4082 470P
T4081
G2A352C00002
C4081 0.022
R4082 3300
Q4081
2SD602A
(OSC)
C4084 1800P
C4085 0.022

P4001
(TO FULL ERASE HEAD)
FULL ERASE IN 1
FULL ERASE OUT 2
Ⓟ UNREG 6V
Ⓟ GND

R4086 2200
Q4084
2SB710A
(ERASE HEAD DRIVE)
R4087 2200
QR4082
UN2213
(BIAS (H) :ON)
L4081 470u
C4083 6V47

P5001
(TO CYLINDER UNIT)
LP/EP R 1
LP/EP COM 2
LP/EP L 3
SP R 4
SP COM 5
SP L 6
AUDIO HEAD L 7
AUDIO HEAD COM 8
AUDIO HEAD R 9
Ⓐ AUDIO HEAD R
Ⓐ AUDIO HEAD COM
Ⓐ AUDIO HEAD L

C4066 2200P
QR4061
UN2211
(PAL 9H (H) :ON)

Ⓢ BIAS (H)
Ⓢ PAL 9H (H)
Ⓢ D.REC (H)
Ⓟ Ⓓ TUNER AUDIO(N)
Ⓐ AUDIO IN(N)
Ⓐ AUDIO OUT(N)

QR4081
UN2111
(D.REC (H) :OFF)
R4084 1K
Q4082
2SD1149
(PB:ON)
R4085 1K
Q4083
2SD601A
(PB:ON)

Ⓟ AUDIO 5V
Ⓟ VIDEO 5V

R4061 470K
C4061 6800P
R4062 15K
R4063 330
C4062 6V22
C4063 50V3.3
R4071 15K
C4065 1800P
R4015 20K
C4042 50V4.7

C4041 50V4.7
C4064 1800P
C4018 6V22

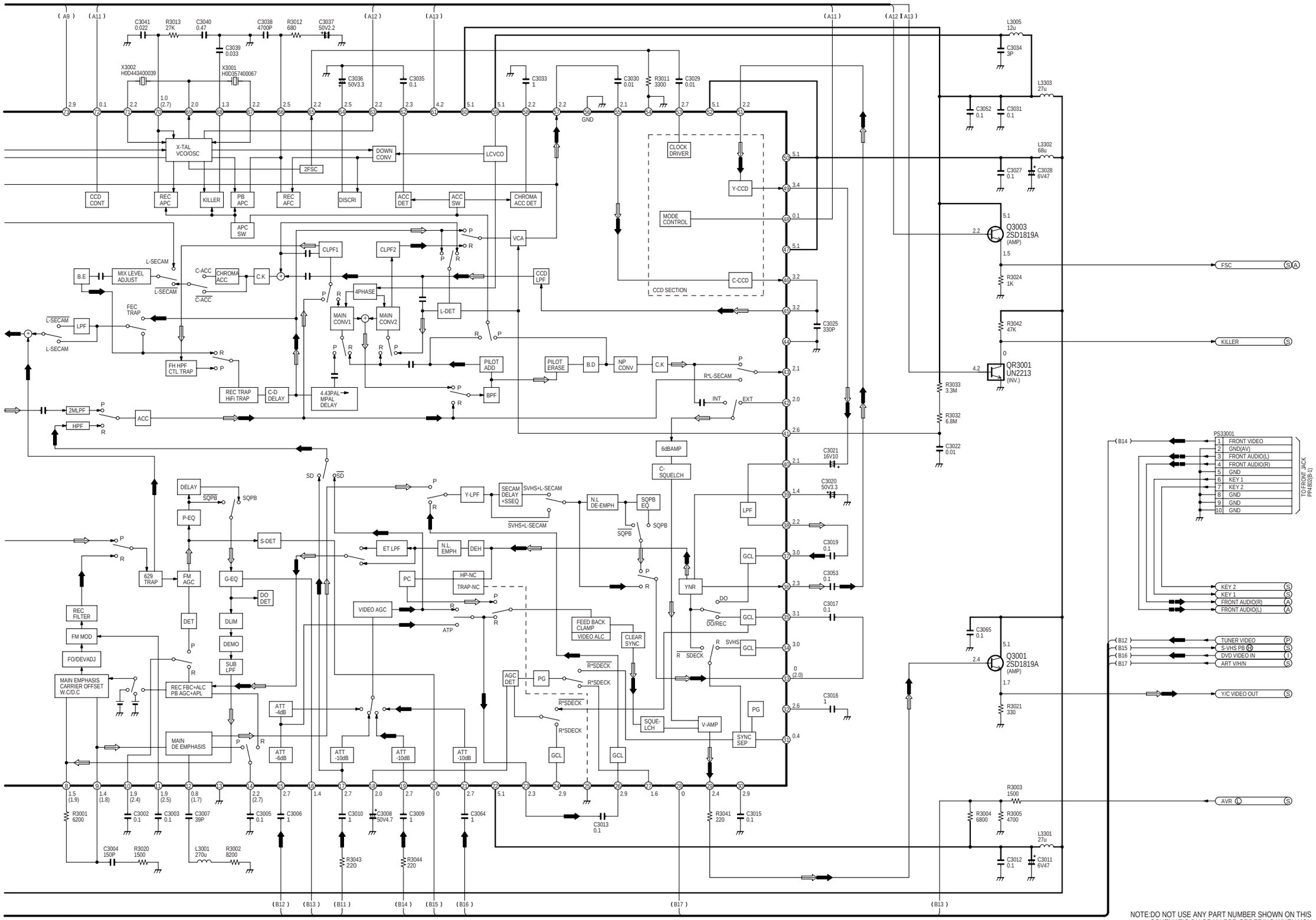
SP ON
FH TRAP
PREAMP
REC ON
EP ON
REC EQ
R
P
VCA
DET
BAND GAP

IC3001
C1AB00001836
C4010 16V10
C3062 16V10
R4017 56K
R4016 47K
R4011 4700
R4012 15K

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

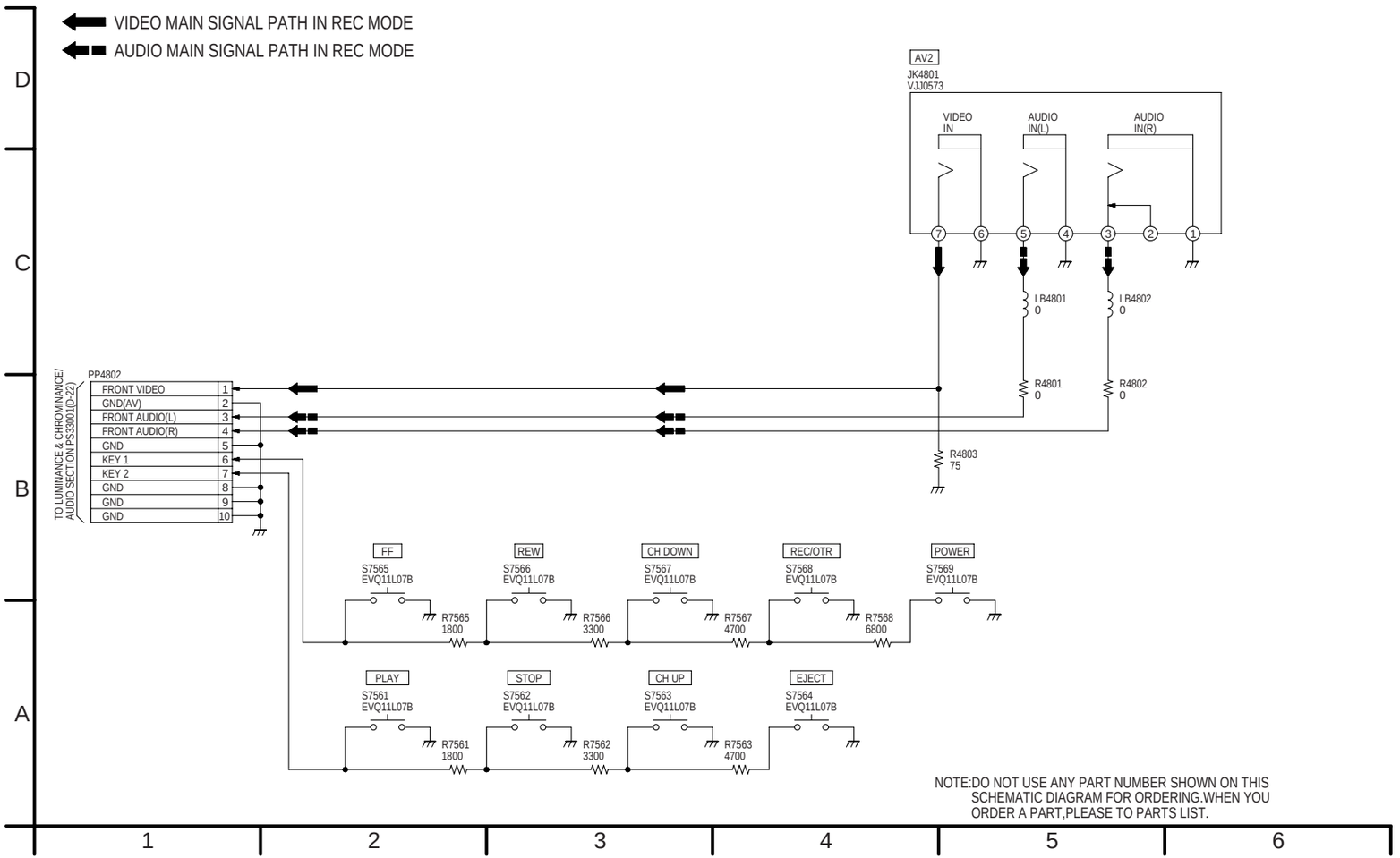


NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

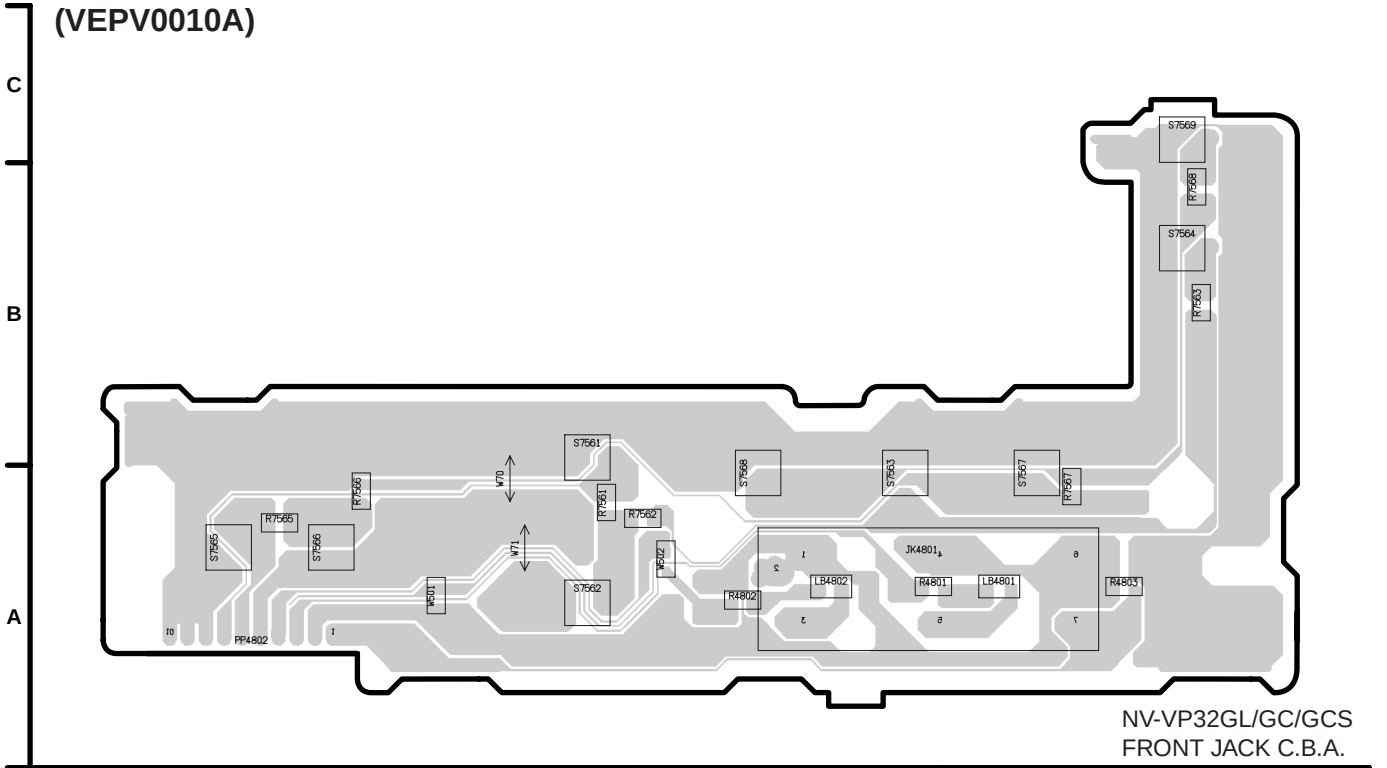
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

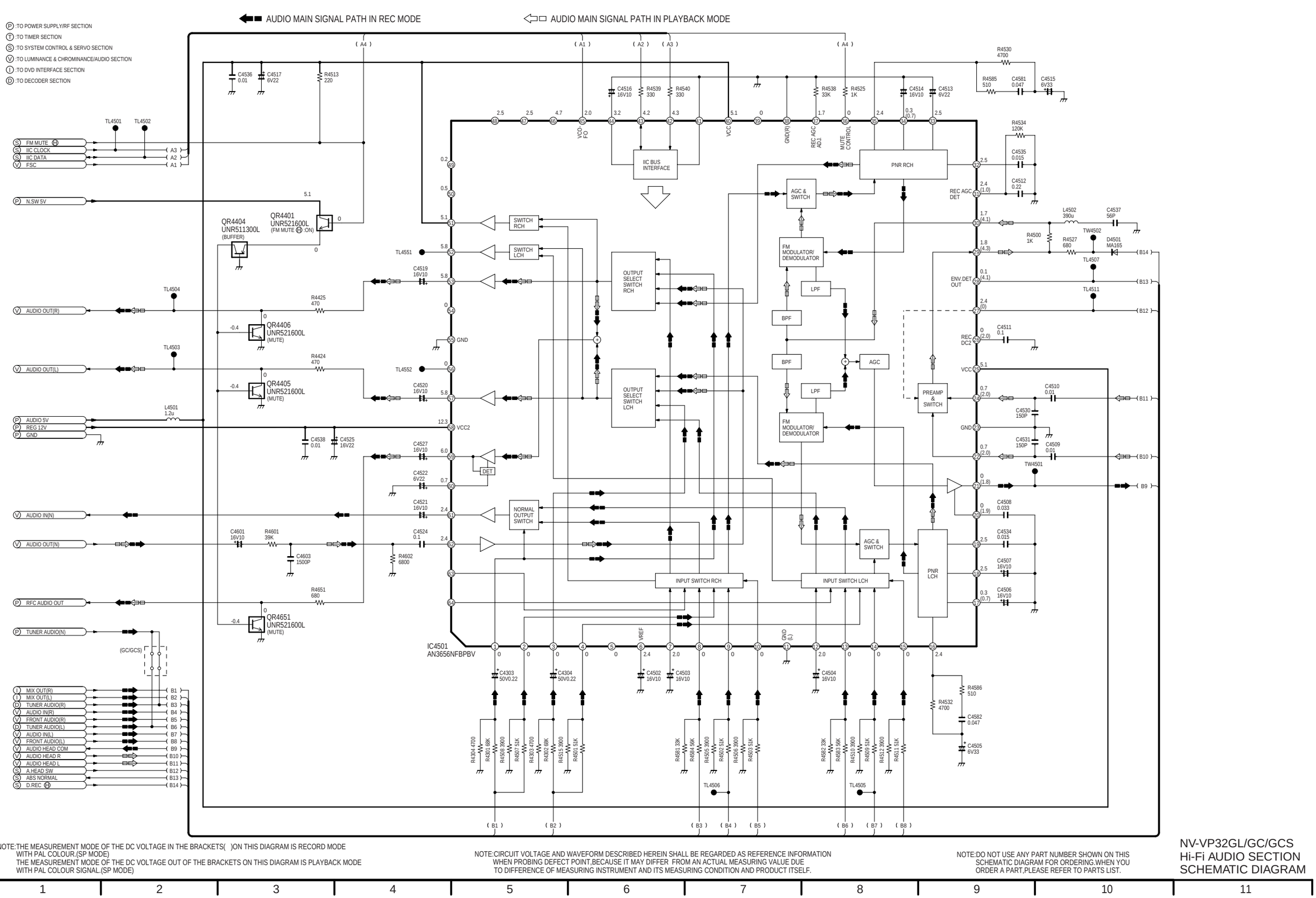


NV-VP32GL/GC/GCS
FRONT JACK SCHEMATIC DIAGRAM

(VEPV0010A)



NV-VP32GL/GC/GCS
FRONT JACK C.B.A.

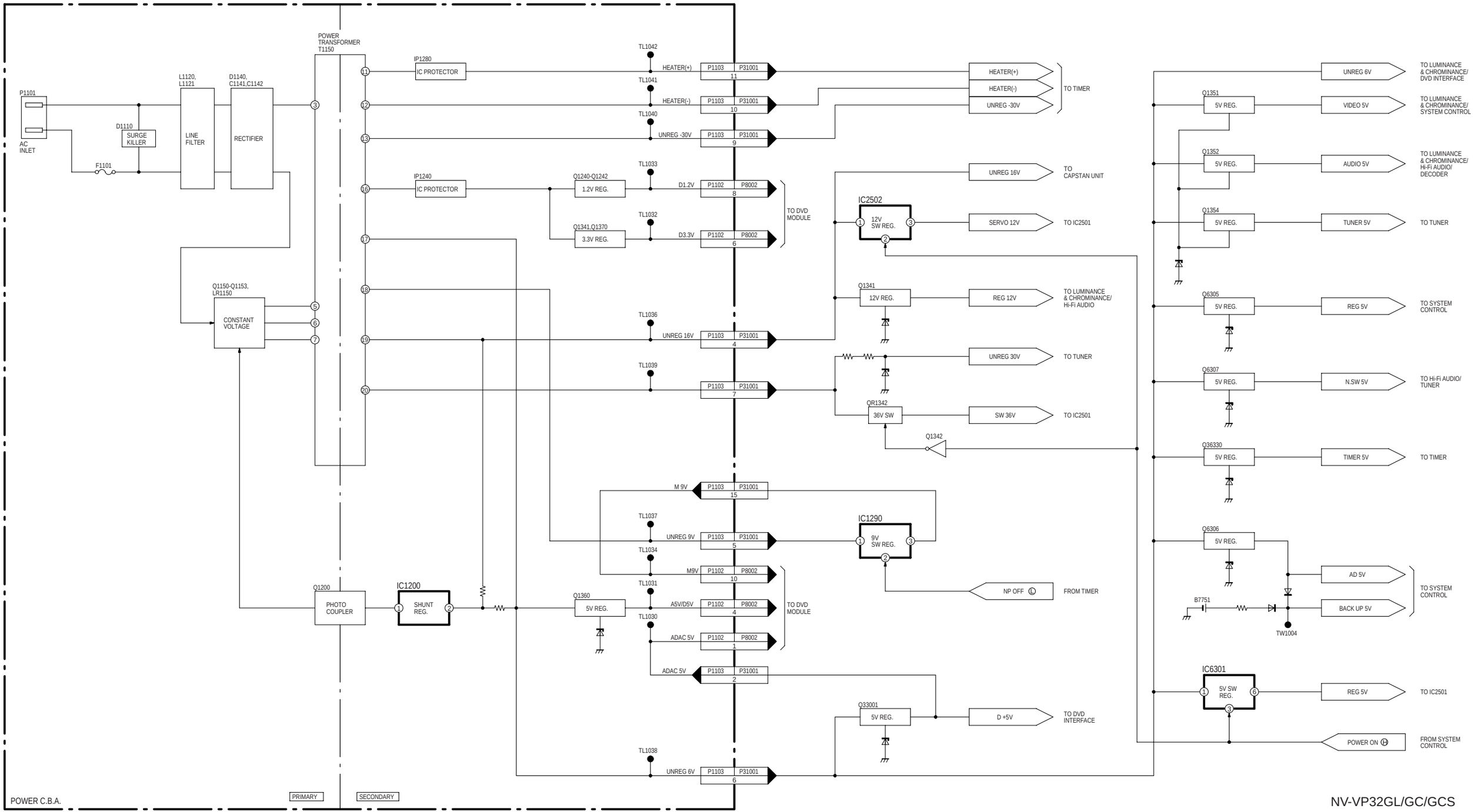


NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR.(SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

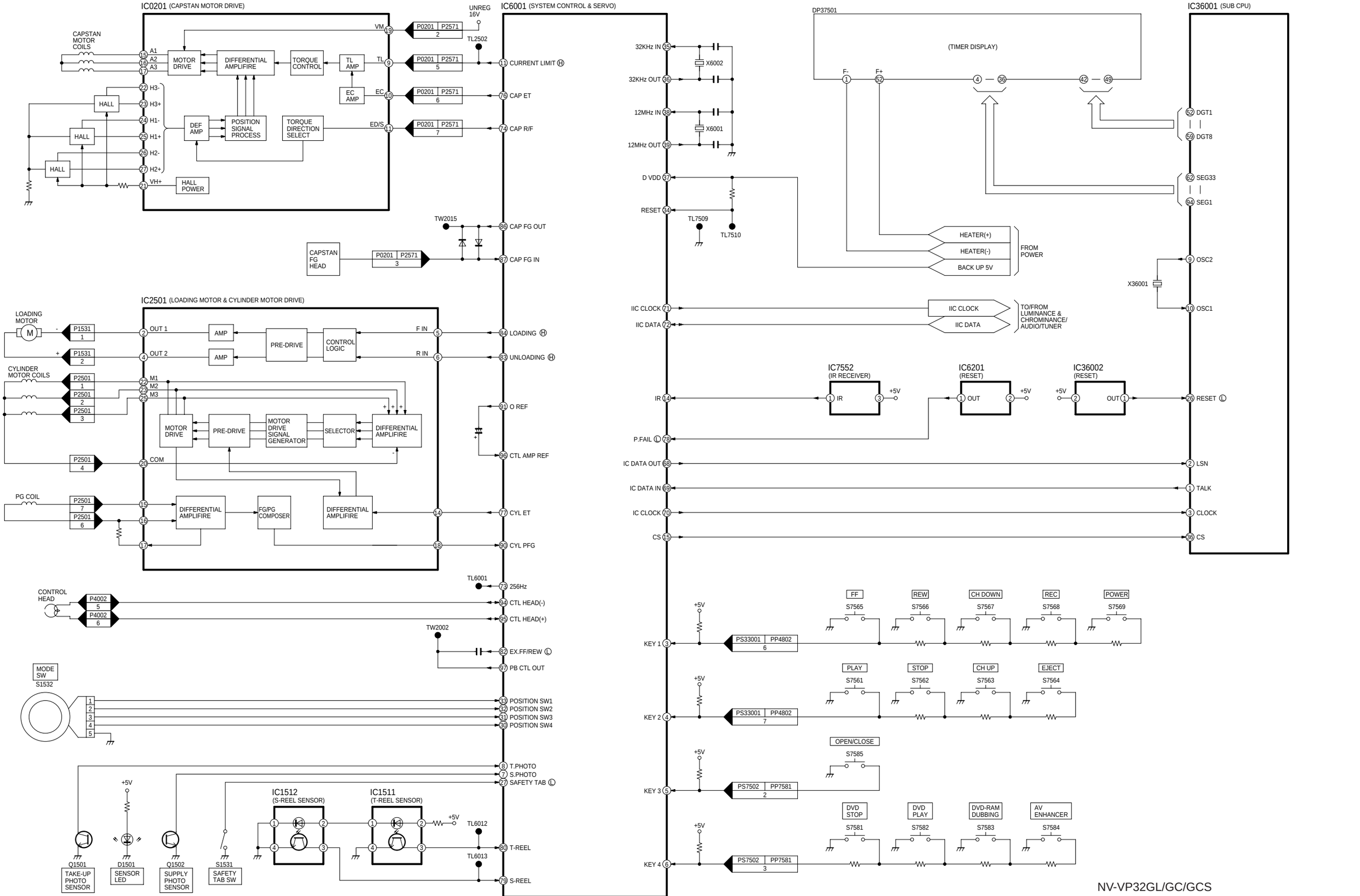
NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
Hi-Fi AUDIO SECTION
SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
POWER BLOCK DIAGRAM



NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO BLOCK DIAGRAM

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓘ :TO DVD INTERFACE SECTION

DP37501
A2BB00000136

IC36001
MN101C35DPK

IC36002
C0EBE0000198
(RESET)

X36001
H2D800400009

PS7502
TO FRONT SW
PP7581(A-1)

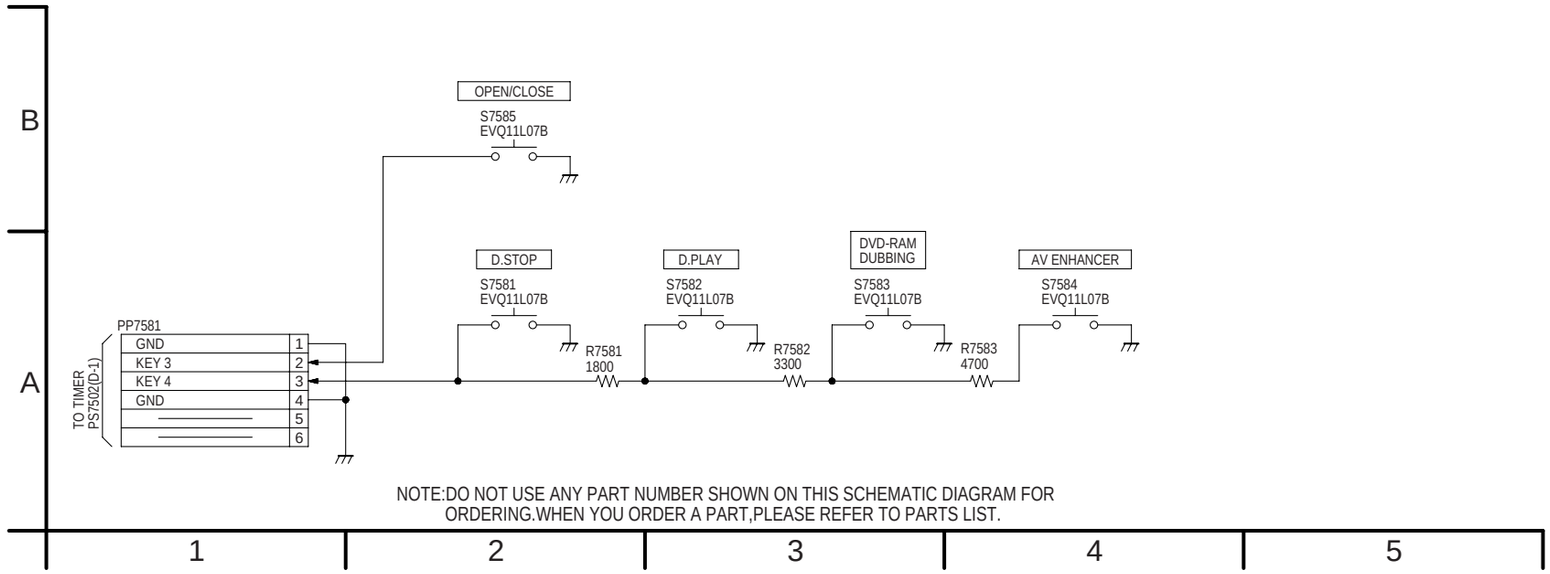
PP6101
(TO TRAY SW)

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

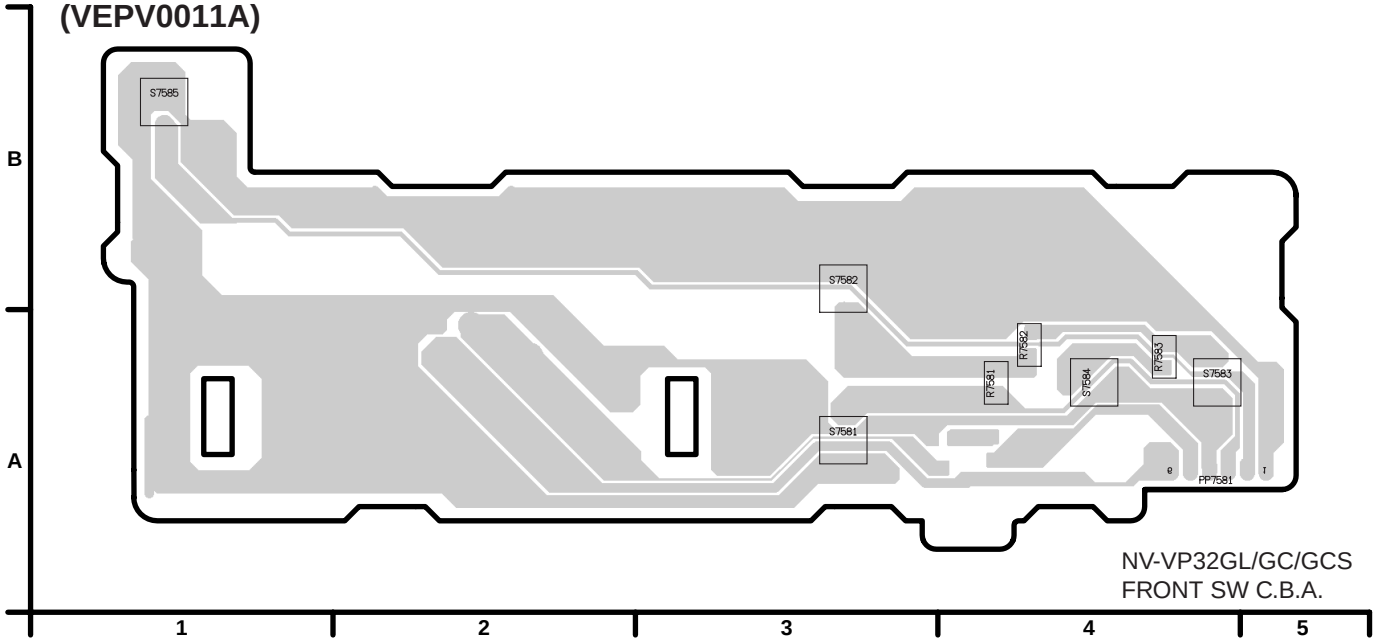
NV-VP32GL/GC/GCS
TIMER SECTION SCHEMATIC DIAGRAM



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
FRONT SW SCHEMATIC DIAGRAM

(VEPV0011A)



NV-VP32GL/GC/GCS
FRONT SW C.B.A.

VIDEO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

FROM TUNER
TUNER VIDEO

FROM DVD INTERFACE
DVD VIDEO IN

AV2 IN
JK4801
(FRONT JACK)
VIDEO IN

PP4802 PS33001 1

IC3001 (AUDIO/VIDEO SIGNAL PROCESSOR)

ATT -6dB
ATT -4dB
ATT -10dB
ATT -10dB
ATT -10dB

VIDEO AGC

SVHS
SVHS
ATP

HPF
2MHz LPF
ACC
CLEAR SYNC
FEED BACK CLAMP
VIDEO ALC

EXT
INT
FIXED TO INT IN THES MODELS BY PIN53

IC6001
OSD SIGNAL PROCESS

SQUELCH
NTSC/PAL CONVERTER
COLOUR KILLER
6dB AMP
C-SQUELCH
V-AMP
Q3001
BUFFER
Q7701
BUFFER
L7702, C7714
BPF
(GC/GCS)

MAIN CONV 2
MAIN CONV 1
C LPF2
VCA
C CCD
CCD LPF
4.43PAL → MPAL CONV DELAY
C LPF1

PILOT ADD
PILOT ERASE
BPF
B.D

GCL
Y-LPF
SECAM DELAY +SSEQ
SVHS+L SECAM
SVHS+L SECAM
NON-LINEAR DE-EMPHASIS
SQPB
SQPB
SQPB EQ

IC3701
FROM DVD INTERFACE
DVD VIDEO OUT
DVD OUT (H)

AV1 IN
VHS/DVD OUT
JK33001
(REAR JACK)
VIDEO OUT
VIDEO IN
TL3711
TL3712

TO TUNER
RFC VIDEO OUT

R(SVHS)
R(SVHS)
DO/REC
DO
GCL
GCL
LPF
Y-CCD DELAY

Y-NOISE REDUCTION
HP-NC TRAP-NC
PHASE COMPARATOR
DEH
NON-LINEAR EMPHASIS
ET LPF

APC SW
PB APC
KILLER
REC APC
ACC SW
ACC DET
CHROMA ACC DET

L3001, C3007
PEAKING FILTER
MAIN DE-EMPHASIS
REC FBC+ALC
PB AGC+APL

MAIN EMPHASIS CARRIER OFFSET W.C/D.C
fo/DEVIATION ADJUSTMENT
FM MODULATION
REC FILTER

SUB LPF
DEMO
DLIM
G-EQ

X3001
X3002
X'TAL VCO OSCILLATOR
2FSC
C CLOCK DRIVER
TO C CCD

SQPB
SQPB
SQPB DL
P-EQ
FM AGC
629MHz TRAP

INT
EXT
EXTERNAL PB LUMINANCE SIGNAL INPUT LINE (NOT USED IN THESE MODELS)

B.E
MIX LEVEL ADJUST
L SECAM
L SECAM
C-ACC:ON
THROUGH
CHROMA ACC
COLOUR KILLER
fh HPF CTL TRAP
REC TRAP/ Hi-FI TRAP
C-DELAY

NO FREC TRAP
FREC TRAP
L SECAM
L SECAM
LPF

REC MUTE
VCA
SP
SP

SP2
SP2
SP1
SP1
CH2
CH1

SP2
SP2
SP1
SP1
CH2
CH1

SP L
SP COM
SP R
P5001 6
P5001 5
P5001 4
TO/FROM DD CYLINDER VIDEO HEAD

LP/EP L
LP/EP COM
LP/EP R
P5001 3
P5001 2
P5001 1
TO/FROM DD CYLINDER VIDEO HEAD

TO/FROM SYSTEM CONTROL
IIC CLOCK
IIC DATA

TO SYSTEM CONTROL
S-VHS PB (H)
S-VHS DET

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE BLOCK DIAGRAM

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

AV2 IN
JK4801
(FRONT JACK)
IN (R)
IN (L)
FRONT AUDIO(R)
FRONT AUDIO(L)
PP4802 PS33001 4
PP4802 PS33001 3

IC4501

FROM DVD INTERFACE
MIX OUT(R)
MIX OUT(L)

AV1 IN
VHS/DVD OUT
JK33001
(REAR JACK)
IN (R)
IN (L)
AUDIO IN (R)
AUDIO IN (L)
TL4406 TL4506 TL4405 TL4505

OUT (R)
OUT (L)
AUDIO OUT (R)
AUDIO OUT (L)
TL4404 TL4504 TL4403 TL4503
QR4406 MUTE
QR4405 MUTE

TO TUNER
RFC AUDIO OUT
QR4651 MUTE

(GL)
FROM DECODER
TUNER AUDIO(R)
TUNER AUDIO(L)

(GC/GCS)
IC3001
FROM TUNER/ DECODER
TUNER AUDIO(N)
MUTE
REC EQ
MUTE
VCA
R
P
P4002 4
P4002 3
AUDIO HEAD
fh TRAP
MUTE CTL
MUTE CTL

FROM SYSTEM CONTROL
FM MUTE (H)

INPUT SELECT SWITCH RCH
INPUT SELECT SWITCH LCH
OUTPUT SELECT SWITCH RCH
OUTPUT SELECT SWITCH LCH
PNR RCH
PNR LCH
NORMAL SELECT SWITCH

AGC & SWITCH
FM MODULATOR/ DEMODULATOR
LPF
BPF
BPF
LPF
FM MODULATOR/ DEMODULATOR
AGC & SWITCH

IIC BUS INTERFACE
TL4501 TL4502
IIC CLOCK
IIC DATA
TO/FROM SYSTEM CONTROL

VCO F0
FSC
FROM LUMINANCE & CHROMINANCE

AUDIO H.SW
FROM SYSTEM CONTROL

TW4502
D.REC (H)
FROM SYSTEM CONTROL

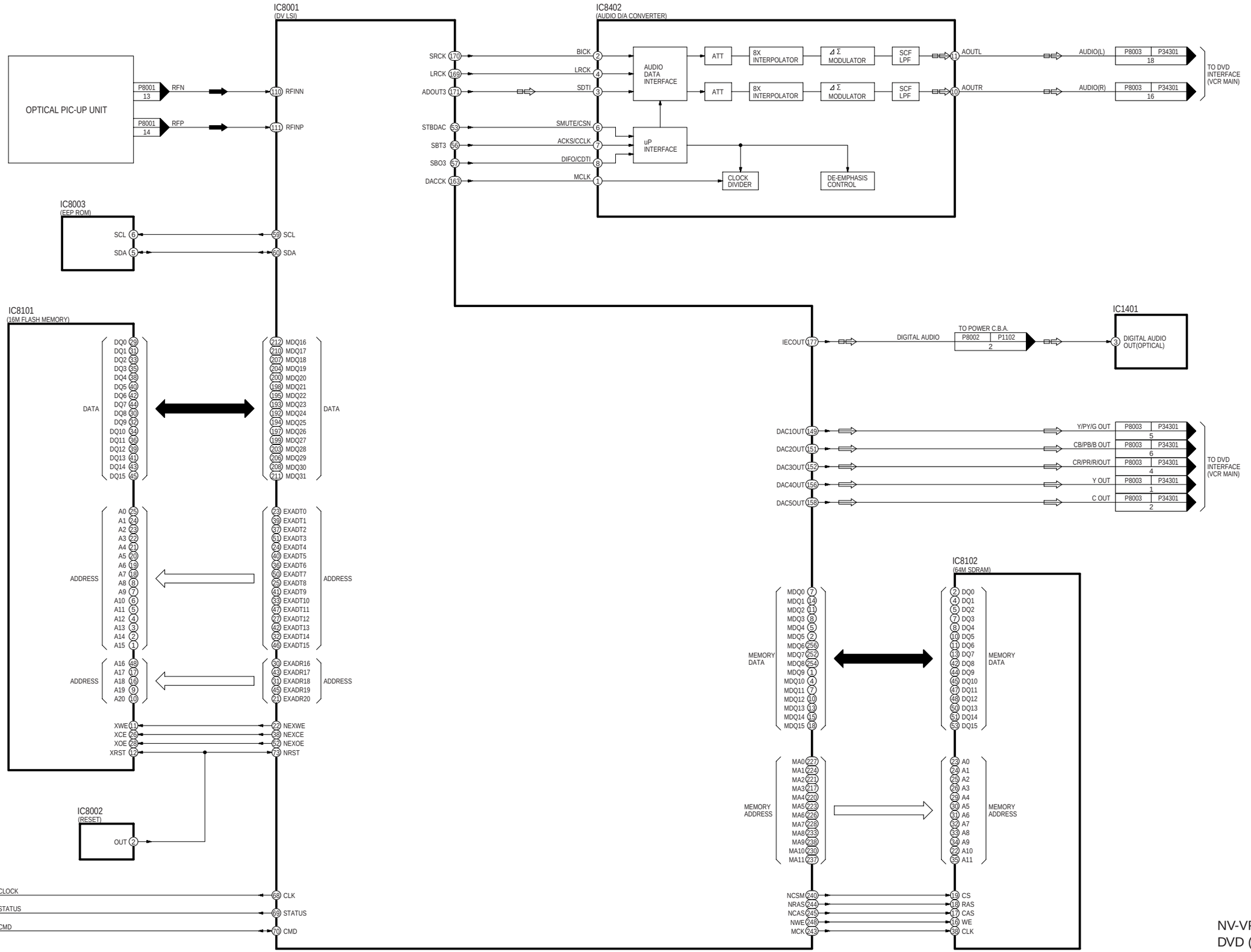
PREAMP & SWITCH
AGC
P5001 7
P5001 8
P5001 9
L
R
Hi-Fi AUDIO HEAD

NV-VP32GL/GC/GCS
AUDIO BLOCK DIAGRAM

RF SIGNAL PATH

VIDEO MAIN SIGNAL PATH

AUDIO MAIN SIGNAL PATH



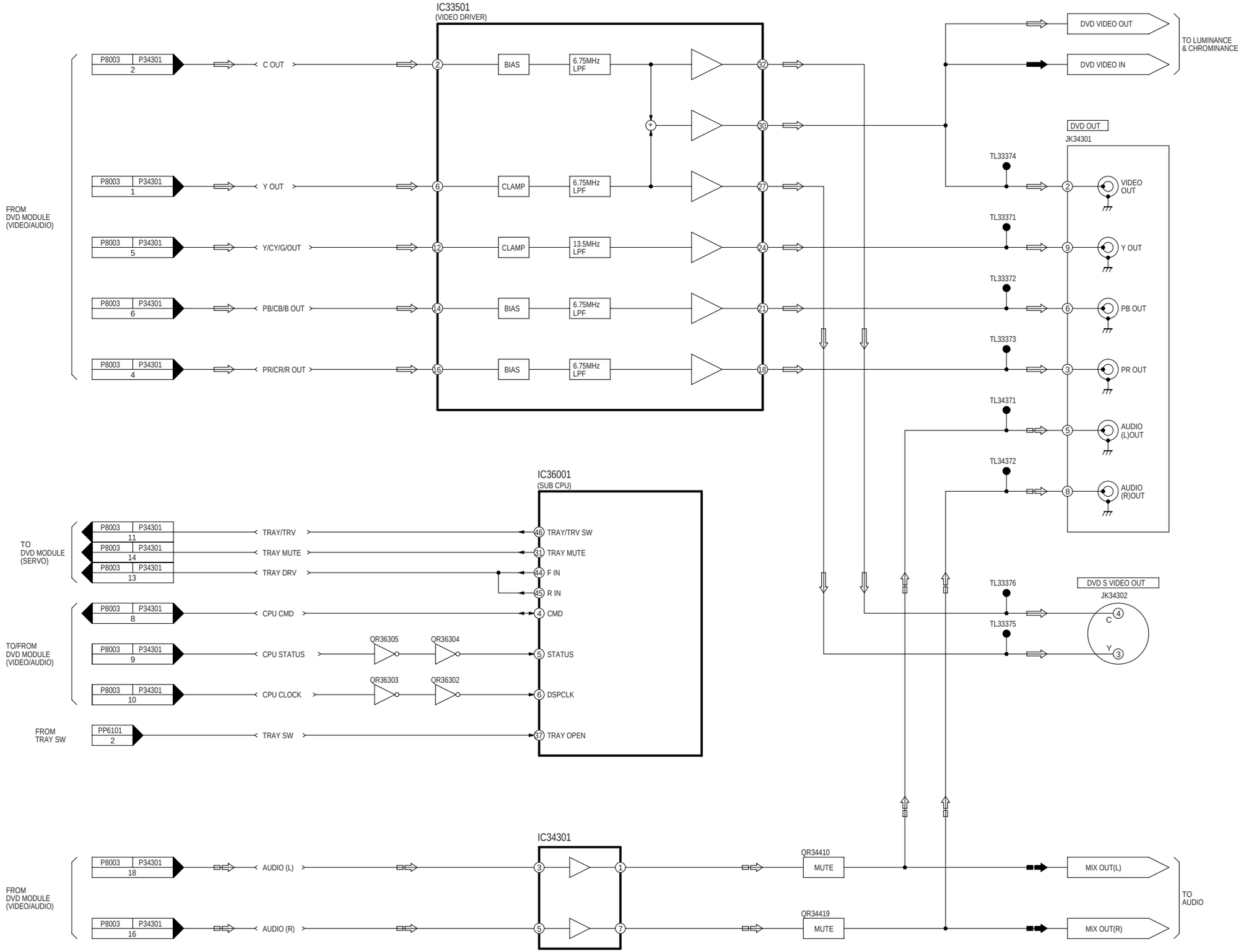
NV-VP32GL/GC/GCS
DVD (VIDEO/AUDIO)
BLOCK DIAGRAM

VCR VIDEO MAIN SIGNAL PATH IN REC MODE

VCR AUDIO MAIN SIGNAL PATH IN REC MODE

DVD VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

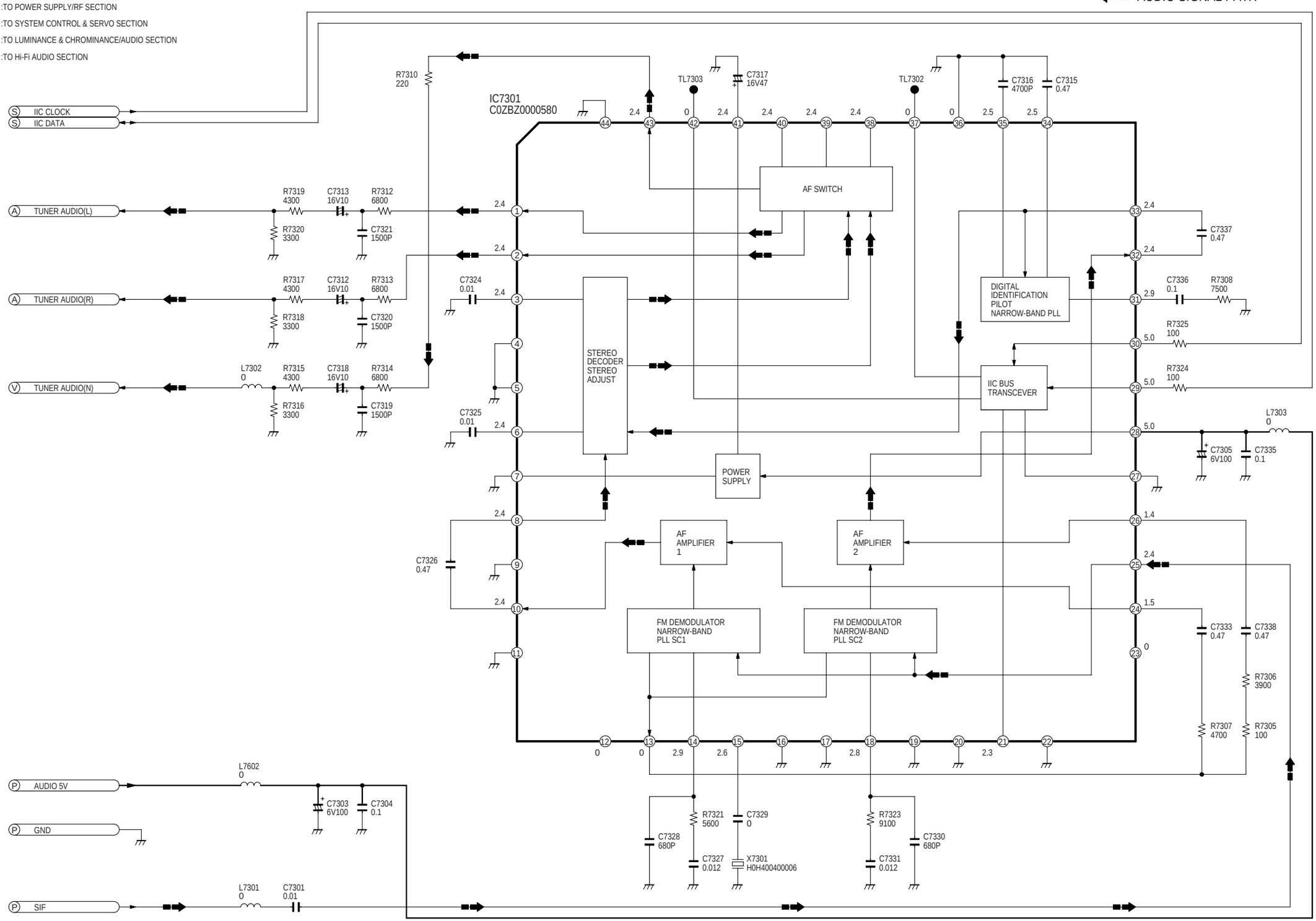
DVD AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



NV-VP32GL/GC/GCS
DVD INTERFASE BLOCK DIAGRAM

AUDIO SIGNAL PATH

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION



NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL
DECODER SECTION SCHEMATIC DIAGRAM

RF SIGNAL　MOTOR DRIVE SIGNAL　TRACKING ERROR SIGNAL　FOCUS ERROR SIGNAL

OPTICAL PICK UP UNIT

PHOTO DETECTOR
B1 B2 A1 A2 A4 A3 B4 B3

HEAD AMP

P8001 21 TA(DVD)
P8001 20 TB(DVD)
P8001 18 TC(DVD)
P8001 19 TD(DVD)
P8001 4 SUB1
P8001 5 SUB2
P8001 16 FE1(DVD/CD)
P8001 17 FE2(DVD/CD)
P8001 13 RFN
P8001 14 RFP

LASER DIODE (DVD)
P8001 9 LD+(DVD)
Q8001,Q8003 LD DRIVE
P8001 12 PIN(DVD)

LASER DIODE (CD)
P8001 11 LD+(CD)
Q8002,Q8004 LD DRIVE
P8001 3 PIN(CD)

ACTUATOR
TRACKING COIL
P8001 26 T+
P8001 23 T-
FOCUS COIL
P8001 25 F+
P8001 24 F-

IC8001 (DV LSI)
138 VIN1
137 VIN2
136 VIN3
135 VIN4
134 VIN5
133 VIN6
132 VIN7
131 VIN8
130 VIN9
129 VIN10
110 RFINN
111 RFINP
124 LPCO1
123 LPC1
126 LPCO2
125 LPC2

DRV8 83
DRV4 79
DRV0 75
PWM0 148
PWM1 147
DRV1 76
AD1 140

IC8201 (MOTOR DRIVE)
9 CH1,2 MUTE
27 CH3 MUTE
26 TRIN
BIAS1
3 VIN2
2 VIN1
23 VIN3
6 OPOUT
14 VO1+
13 VO1-
12 VO2+
11 VO2-

CH1 CH2 LEVEL SHIFT

BIAS2
LDIN 24
TRAY DRV P8003 P34301 13 FROM DVD INTERFACE (VCR MAIN)

CH4 VO4+ 15 P8201 FP8251 6 M2602 TRAVERS MOTOR
CH4 VO4- 16 P8201 FP8251 5
(VCC2-Vf)/2

CH3 VO3+ 17 P8201 FP8251 4 M2601 SPINDLE MOTOR
CH3 VO3- 18 P8201 FP8251 3
(VCC2-Vf)/2

OPIN- 5
OPIN+ 4

CH4 MUTE 20 TRAY MUTE P8003 P34301 14 P8003 P34301
LD CNT 28 TRAY/TRV P8003 P34301 11 P8003 P34301
FROM DVD INTERFACE (VCR MAIN)

(VCC1/2)

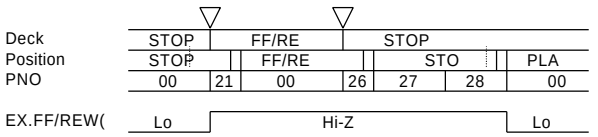
NV-VP32GL/GC/GCS
DVD (SERVO) BLOCK DIAGRAM

No.	Terminal Name	I/O	Description	P. OFF	P. failure	Reset/ Releas
1	VSS		Unused terminal. Connected to GND. (Input taken as 0V)			
2	CODE1	I	Model setting terminal.	In	In	In
3	KEY1	I	AD Input terminal 1.	In	In	In
4	KEY2	I	AD Input terminal 2.	In	In	In
5	KEY3	I	AD Input terminal 3.	In	In	In
6	KEY4	I	AD Input terminal 4.	In	In	In
7	S-PHOT	I	Tape end detection Input terminal Input voltage:(1) >2.6V, Black tape (2) >2.4V, White tape	In	In	In
8	T-PHOT	I	Tape beginning detection Output terminal Input voltage: (1) >2.6V, Black tape (2) <2.4V, white tape	In	In	In
9	TRACKING_ENVE	I	Normal head Video Envelope Detecting Input Terminal Cylinder FG = 1 or 4 Base From Input time until PGMM time taken as reference time. Timing calculation is performed as follow. Normal head | Ref time + 90 degree time *90 degree time is defined as :NTSC : 8400us,PAL: 10000 us	In	In	In
10	PIC2	O	Control terminal for the picture mode.	Low	Low	Low
11	CURRENT.LIMIT	O	Capstan current limit control terminal (Output inpedance: Min:1K, TYP:2.5K, Max: 4.0K)	In DA=0V	Low	In DA=0V
12	EEPROM_CS	O	Navigator back-up EE PROM Chip Select terminal Active Low Output	Low	Low	Low
13	ART.V/H/N	O	Dummy V Output terminal However,during Recording Program Navigator writing, Hi-Z = Fixed.	Low	Low	Low
14	REMOCON	I	Remote control input terminal	In	In	In
15	OPECON_CS	O	CS(Chip Select) signal for TIMER micon Active = " H " Non-active = "L"	(Normal Opera-tion)	Low	Low
16	CLOCK.SLAVE(H)	O	1) In test mode: Timer Clock Adj [transmit mode] : H --> L Timer Clock Adj [receive mode] : L --> H 2) Other than test mode : always L	Low	Low	Low
17	DVD_OUT(H)	O	Common Output = For DVD, Output = High Common Output = For VCR, Output = Low As for DVD/VTR during P.Off, Output = Low	Normal Opera-tion	Low	Low
18	VIDEO.H.SW	O	Video Head Switch Signal (During L'/R = "H", during R'/L = "L") Cylinder FG= 1 or 4, Ref time taken as Input time until PGMM time. Timing calculation is performed based on the following. Normal Head | Ref time 10 u Head | Ref time + 120 degree time 1H (=64us) *120 degree time is defined as NTSC:11122us,PAL 13333us	Low	Low	Low
19	AUDIO.H.SW	O	Audio head switch signal	Low	Low	Low
20	D.REC(H)	O	Video Record Current timing terminal	Low	Low	Low
21	TEST2(L)	I	Test mode 2 setting terminal during test 2, Input = Low during normal, Input = High	In	In	In
22	PROGRESSIVE_TV (L)	I	Port for scanning line control: Scanning line 628 : H Scanning line 624 : L	Low	Low	Low
23	ABS_NORM(L)/A.ADJ	I	Serve as Forced Normal Selection Signal & Auto Adjustment Trigger Input Terminal to switch to forced normal audio, Input = Low (ADUBPS, during HiFi Audio Envelope decline Other than that, Input = High	In	In	In
24	AVR(L)	O	Simplified AI Playback Output terminal Initial condition: Input setting 1st Step : "L" setting	Hi-Z	Hi-Z	Hi-Z
25	PB×5(H)	O	Video circuit control signal 5 times mode playback, High Output Other than above, Low Output	Low	Low	Low

26	BIAS(H)	O	Linear Audio record timing terminal When recording linear audio, take (H) as output Output mode: REC,(ADUB,AV-INSERT) When start recording, set BIAS(H), R.REC(H) output range 140~160msec recording time When finish recording, BIAS(L) = Output, D.REC(L) Time = 0 ~ 20 msec	Low	Low	Low
27	S.TAB(L)	I	SAFETY TAB DETECTION INPUT WITH Safety Tab: Input = Low Without Safety Tab: Input = High	In	In	In
28	FM.MUTE(H)	O	Audio Mute Output terminal During P.Off,Head cleaning,Timer Standby,and VPS/PDC Standby, (After canceling these modes,take (L) as the output after delayed time= 600msec. During VV,when tape speed is not 1 time speed, Output = High. (Take (L) as the output, after switching over to 1 time speed,and after delayed time = 600msec. Take (H) as the output During switching over of EE/VV, Output = High after interposing the changing point. (Take (L) as the output, after switching over of EE/VV, and delayed time= 600ms. When J.CLK/A.DEF/NOR terminal is A.DEF, Output = High.	High	Hi-z	High
29	SW1	O	AUDIO SYSTEM (TUNER PRESET) select terminal. AUDIO SYSTEM = BG, I: High is Output AUDIO SYSTEM = DK, M: Low is Output	Hi-Z	Hi-Z	Hi-Z
30	POS.SW4	I	Mecha position Input Refer to the mecha timing chart for Input result data control.	In	In	In
31	POS.SW3	I		In	In	In
32	POS.SW2	I		In	In	In
33	POS.SW1	I		In	In	In
34	RESET(L)	I	Reset terminal	In	In	In
35	32KHz.IN	I	Sub clock 32.768KHz osc.input	In	In	In
36	32KHz.OUT	O	Sub clock 32.768KHz osc.output	Out	Out	Out
37	5V(D)	-	Digital port Power Vcc (5V)	-	-	-
38	12MHz.IN	I	Main clock 12/16MHz osc.input.	In	In	In
39	12MHz.OUT	O	Main clock 12/16MHz osc.output.	Out	Out	Out
40	GND(OSC)	-	OSC circuit Digital GND.	-	-	-
41	NC		Unused terminal. Fixed Output = Low	Low	Low	Low
42	NC		Unused terminal.Fixed Output = Low.	Low	Low	Low
43	32K.START(L)	I	Clock source selection terminal during reset start. Connect Vcc(5V), when 12/16 MHz High speed mode Connect to Vss(0V), when 32KHz low speed mode	In	In	In
44	LC.OSC.IN	I	LC osc. Input terminal	In	In	In
45	LC.OSC.OUT	O	LC osc. Output terminal	Out	Out	Out
46	GND	-	Terminal B for testing. (connected to GND)	-	-	-
47	4FC.LPF	I	Internal OSC Connection terminal for sync generator circuit.	In	Low	In
48	FSC.IN	I	Sub carrier (fsc) input terminal for sync generator circuit.	In	Low	In
49	GND(OSD)	-	GND terminal for OSD circuit	-	-	-
50	CVIN	I	Composite Video signal input terminal	In	In	In
51	VSS		Unused terminal. Connected to GND.			
52	CVOUT	O	Composite Video Signal Output Terminal.(Do not use as common port)	Out	Out	Out
53	5V(OSD)	-	OSD circuit Power supply Terminal	-	-	-
54	HLF	I	Slicer LPF Connection Terminal	In	In	In
55	VHOLD	I	Capacitor Connection terminal of Slicer Ref Voltage Generator Circuit	In	In	In
56	CVIN(EDS)	I	Slicer Composite Video Signal Input Terminal.	In	In	In
57	GND	-	Testing terminal A. (Connected to GND)	-	-	-

POS.SW1	POS.SW2	POS.SW3	POS.SW4	Position
0	0	0	0	
0	0	0	1	
0	0	1	0	DOWN
0	0	1	1	R-REW
0	1	0	0	LOAD
0	1	0	1	REV
0	1	1	0	PLAY
0	1	1	1	POFF
1	0	0	0	STOP_R
1	0	0	1	STOP_F
1	0	1	0	
1	0	1	1	
1	1	0	0	FF / REW
1	1	0	1	
1	1	1	0	EJECT
1	1	1	1	

58	DVDIN(H)		Unused terminal			
59	SECAM MIX	O	SECAM CHROMA signal input terminal for SECAM SIGNAL SUPER IMPOSE.	Low	Low	Low
60	CHARA+HEM	O	OSD REC control terminal. 1.During OSD REC. *During OSD character is output (Including Hemming): High is output. *Output than above condition: Low is output. 2.Other than OSD REC: High-Z.	Hi-Z/Low	Hi-Z/Low	Hi-Z/Low
61	SW2	O	AUDIO SYSTEM (TUNER PRESET) select terminal. AUDIO SYSTEM = BG, DK: High is Output. AUDIO SYSTEM = I, M: Low is Output.	Low	Low	Low
62	A.SEARCH (L)	I/O	AGC gain selection signal for tuner CH selection. During digital AFC is working at TUNER PRESET mode: Low (AGC is high speed) Other than above: Hi-Z (AGC is normal speed)	Low	Low	Low
63	VBI2	O	When writing navigator: tape navi data mass pulse (special use) Other than writing : Hi-Z (common use)	Hi-Z	Low	Hi-Z
64	VBI1	O	When writing navigator: tape navi data writing pulse (special use terminal) Other than writing : Hi-Z (common use terminal)	Hi-Z	Low	Hi-Z
65	EEPROM_OUT	O	Used during Navi back-up mode EEPROM control terminal: data output	Low	Low	Low
66	EEPROM_IN	I	Used during Navi back-up mode EEPROM control terminal: data input	In	In	In
67	EEPROM_CLK	O	Used during Navi back-up mode EEPROM control terminal: clock output	Low	Low	Low
68	IC.DATA.OUT	O	Peripheral IC control Timer-Bus signal: data output	(Normal Operation)	Low	Hi-Z
69	IC.DATA.IN	I	Peripheral IC control Timer-Bus signal: data input	(Normal Operation)	In	In
70	IC.DATA.CLK	O	Peripheral IC control Timer-Bus signal: clock output	(Normal Operation)	Low	Hi-Z
71	IIC.CLK	O	AV1 Chip/FM Audio IC serial communication terminal(IIC).	(Normal Operation)	Low	Hi-Z
72	IIC.DATA	I/O	AV1 Chip/FM Audio IC serial communication terminal(IIC).	(Normal Operation)	Low	Hi-Z
73	256Hz/ROM.CORE	O	Since there are 2 function controls,port function is divided into 2 as shown below. (1) Normal mode/Service mode : Fixed Output(NC) = L (2) Test mode: Judge ROM core confirmation. Decide port function. When ROM core confirm mode: ROM.CORE terminal When other than ROM core confirm mode: Main clock Adjustment Internal Osc. Output terminal (3) Test 2 mode:Main clock Adjustment Internal Osc. Output terminal Control method of each port function is shown as below. [ROM .CORE terminal]When ROM collection setting bit = ON, Output = High When ROM collection setting bit = OFF, Output = Low [Main clock Adjuatment Internal Osc. Output terminal] Output : 256Hz	(Normal Operation)	Low	Low
74	CAP R/F	O	Capstan driver rotating direction control RVS = "High", FWD = "Low"	Low	Low	Low
75	P_ON(H)	O	VTR power control terminal. When VTR = Power Off, and, DVD = Power Off, Ouput = Low When VTR peripheral circuit = Power Off/ Timer Standby, Output = Low Even when apparently Power is Off, if Mecha or Peripheral circuit operation is required, output = High If required: Head cleaning, timer confirmation (VPS/PDC standby, ACS) When J.CLK Syscon serial is ON(during J.CLK mode), even if power is off = High	Low	Low	High
76	CAP.ET	O	Capstan motor control voltage supply terminal When higher than Drive Reference Voltage: Accelerated When lower than Drive Reference Voltage : Current off	High PWM= 0V	Low	High PWM= 0V
77	CYL.ET	O	Cylinder Motor Control Voltage Supply terminal When higher than Driver Reference Voltage: current off When lower than Driver Reference Voltage: accelerated However, during Cylinder Off, Max value of decelerated Voltage is as follow. Normal Control : 3.150V Cylinder Off: 5.000V	Low PWM= 5.000V	Low	Low PWM= 5.000V
78	P.FAIL(L)	I	Power Failure Detection Input terminal Input = "L", Power Failure Mode	In	In	In

79	S.REEL.PULSE	I	Pulse Input terminal from reel sensor	In	In	In
80	T.REEL.PULSE	I	Pulse Input terminal from reel sensor	In	In	In
81	LP CARTOON (H)		Unused terminal.	Low	Low	Low
82	EX.FF/REW(L)	I/O	Control Signal Filter Selection Terminal during FF/REW Control spec shall comply with Mecha FFREW(Hi-Z) output timing. Set Input when deck enters FF/RRW mode. During Stop, due to FF/REW stopping process, switch over to STOP3 first, then STOP is canceled.  However, when starting FF/REW, Filter C addition will be required until it become high speed. Then monitor the CTL Amp Gain(COH bit 0-2) setting value. When 5(=60dB) or 7(=70dB), compulsorily, output = Low.	Low	Low	Low
83	UNLOADING(H)	O	Loading Motor Control terminal shall comply with R4 mecha control spec.	Low	Low	Low
84	LOADING(H)	O	Loading Motor Control terminal shall comply with R4 mecha control spec.	Low	Low	Low
85	SQPB (H)	I	The distinction results wheter S-VHS or VHS of the playback tape is input in VV mode. *Low is input: VHS tape playback. *High is input: S-VHS tape playback. Note: When the MESECAM (H) terminal receives "High", above result is invalidated and the tape is judged to VHS tape playback.	In	In	In
86	FG.AMP.OUT	O	Capstan FG Amp Signal Output terminal.	Out	Out	Out
87	FG.AMP.IN	I	Capstan FG signal Input Terminal.	In	In	In
88	GND(A)	-	Analog GND.	-	-	-
89	MESECAM (H)	I	Distinction terminal for the VDIEO SYSTEM. 1.In the VV mode. *High is input: Playback of a MESECAM recorded tape. *Low is input: Playback of other than MESECAM recorded tape. 2.In the EE mode. *High is input: Receiving a SECAM broadcast, or SECAM signal is input.	In	In	In
90	CYL.PFG	I	Cylinder P.FG signal Input Terminal.	In	In	In
91	OREF	O	Analog Amp 1/2 Vdd Ref Power Output Terminal	Out	Out	Out
92	IREF	I	Analog Amp 1/2 Vdd Ref Power Input Terminal	In	In	In
93	VSS		Unused terminal. Connected to GND.			
94	CTL.HEAD(-)	I/O	Control head (-)side Input/Output Terminal.	In/Out	In/Out	In/Out
95	CTL.HEAD(+)	I/O	Control head (+)side Input/Output Terminal.	In/Out	In/Out	In/Out
96	CTL.AMP.REF	I	Control Amp Ref Capacitor Connection Terminal	In	In	In
97	PB.CTL.OUT	O	Control Amp Output terminal.	Out	Out	Out
98	5V(A)	-	Analog Amp Power Supply Terminal	-	-	-
99	5V(AD)	-	AD/8 bit DA Ref Power Supply Terminal.	-	-	-
100	T.S. CURVE	I	Input terminal for "S-Curve" of Tuner AFC at channel selecting.	In	In	In

443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ
BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (–)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (–)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [–]	CONTROL HEAD (–)
CTL [+]	CONTROL HEAD (+)
CTL [–]	CONTROL HEAD (–)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL

CYL GND	CYLINDER GND
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
D. FM REC [L]	DELAIED FM RECORDING Ⓛ
D. GND	DIGITAL GND
D. REC [H]	DELAYED RECORDING Ⓗ
D4/S. LED	D4/STILL LED
D4/STILLED	D4/STILL LED
DAC [CLK]	TUNER DAC (CLOCK)
DAC/FSCS	TUNER DAC/FS CHIP SELECT
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ
DATA	DATA
DECODER [L]	DECODER (L)
DECODER [R]	DECODER (R)
DEW	DEW
DEW SNS	DEW SENSOR
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ
E. REC 5V	EXCEPT RECORDING 5V
EC	ERROR TORQUE CONTROL
ECR	ERROR TORQUE CONTROL REFERENCE VOLTAGE
EDT TRIG [L]	EDIT TRIGGER Ⓛ
EDIT [H]	EDIT Ⓗ
EE [H]	EE Ⓗ
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ
EE. VV. TR	EE/VV/TRICK PLAY
EJECT. PO	EJECT POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK
ENV. SEL	ENVELOPE SELECT
ENVE. OUT	ENVELOPE OUTPUT
ENVE. SEL	ENVELOPE SELECT
ENV SELECT	ENVELOPE SELECT
EP [H]	LP Ⓗ
EP/LP [H]	LP Ⓗ
EP/LP/SP	LP/SP
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ
EPROMCS	EPROM CHIP SELECT
EX. REC 5V	EXCEPT RECORDING 5V
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ
FG1 IN	FG1 PULSE INPUT
FG2 IN	FG2 PULSE INPUT
FILTER ADJUSTMENT	FILTER ADJUSTMENT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ
FM MUT [H]	FM AUDIO MUTE Ⓗ
FM MUTE [H]	FM AUDIO MUTE Ⓗ
FM OUT [L]	FM OUTPUT (L)
FM OUT [R]	FM OUTPUT (R)
FM PACK OUT [L]	FM PACK OUTPUT (L)
FM PACK OUT [R]	FM PACK OUTPUT (R)
FM/BS SEL [L]	FM/BS SELECT (L)
FM/BS SEL [R]	FM/BS SELECT (R)
FS. CLK	FS CLOCK
FUL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E [H]	FULL ERASE HEAD ON Ⓗ

FULL. E. 12V	FULL ERASE 12V
GND [A]	GND (ANALOG)
GND [TU]	GND (TUNER)
GND/N. SW. 12V	GND/NON SW 12V
H. SYNC	HORIZONTAL SYNC
H. AMP. SW	HEAD AMP SW PULSE
H. P <R>	HEAD PHONE (R)
H. P <L>	HEAD PHONE (L)
H. P GND	HEAD PHONE GND
H. P OUT [L]	HEAD PHONE OUTPUT (L)
H. P OUT [R]	HEAD PHONE OUTPUT (R)
H. SW	HEAD SW PULSE
HEAD PHONE [L]	HEAD PHONE (L)
HEAD PHONE [R]	HEAD PHONE (R)
HEAD SW	HEAD SW
HEATER [+]	HEATER (+)
HEATER [–]	HEATER (–)
HSS	HORIZONTAL SYNC SIGNAL
HTR [+]	HEATER (+)
HTR [–]	HEATER (–)
I RFE	REFERENCE CURRENT
ICL	CONTROL AGC CIRCUIT
IF	INTERMEDIATE FREQUENCY
IN SELA1	INPUT SELECT A1 POSITION
IN SELA2	INPUT SELECT A2 POSITION
IN SELA3	INPUT SELECT A3 POSITION
INS L/R [L]	INSERT Lch/Rch Ⓛ
INS. [H]	INSERT Ⓗ
INSEL A1	INPUT SELECT A1 POSITION
INSEL A2	INPUT SELECT A2 POSITION
INSERT	INSERT
INSERT [H]	INSERT Ⓗ
IO CS	INPUT/OUTPUT CHIP SELECT
JOG1	JOG1
JOG S3 LED/FOWRD	JOG LED/FORWARD LED
JOG/F. LED	JOG LED/FORWARD LED
JSB [H]	JSB Ⓗ
JST. CLCK	JUST CLOCK
JST. CLK	JUST CLOCK
JST. CLOCK	JUST CLOCK
L. OUT	Lch OUTPUT
L. CH [H]	Lch Ⓗ
L. CH [L]	Lch Ⓛ
LED (MAIN)	LED (MAIN)
LED (STEREO)	LED (STEREO)
LED (SUB)	LED (SUB)
LED CKL	LED SERIAL CLOCK
LED CKS	LED SERIAL CLOCK
LED DATA	LED SERIAL DATA
LINE IN 1 [L]	LINE INPUT 1 (L)
LINE IN 1 [R]	LINE INPUT 1 (R)
LINE IN 2 [L]	LINE INPUT 2 (L)
LINE IN 2 [R]	LINE INPUT 2 (R)
LINE IN V	LINE INPUT VIDEO
LINE IN [L]	LINE INPUT (L)

LINE IN [R]	LINE INPUT (R)
LINE OUT [L]	LINE OUTPUT (L)
LINE OUT [R]	LINE OUTPUT (R)
LP [H]	LP Ⓗ
LPTRI [L]	LP TRICK PLAY Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING
M GND	MOTOR GND
M REG	MOTOR REGULATOR
MAIN OUT	MAIN OUTPUT
MAIN [L]	MAIN Ⓛ
MAIN/MONO	MAIN/MONAURAL
MAX IN	MAXIMAM INPUT
MES [H]	MESECAM Ⓗ
MESE [H]	MESECAM Ⓗ
MESE [L]	MESECAM Ⓛ
METER 5V	LEVEL METER 5V
METER [L]	LEVEL METER (L)
METER [R]	LEVEL METER (R)
METER. L/AVS	LEVEL METER (L)
METER. R/AVC	LEVEL METER (R)
MI/BI [L]	MIX Ⓗ/BILIGUAL
MIC GND	MIC GND
MIC IN	MIC INPUT
MIC IN [L]	MIC INPUT (L)
MIC IN [R]	MIC INPUT (R)
MIC [H]	MIC Ⓗ
MIX [H]	MIX Ⓗ
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ
MODE SEL	AUDIO MODE SELECT
MODE SW	AUDIO MODE SW
MODE. S. IN	AUDIO MODE SELECT INPUT
MODE. S. OUT	AUDIO MODE SELECT OUTPUT
MONO [H]	MONAURAL Ⓗ
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ
MONO2 [L]	MONAURAL 2
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)
MOTOR GND	MOTOR GND
MUTE	MUTE
N. A. REC [L]	NORMAL AUDIO RECORDING
N. SW 12V	NON SW 12V
N. SW. 5. DET	NON SW 5V DETECT
NICAM	NICAM
NICAM [L]	NICAM Ⓛ
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ
NORMAL [H]	NORMAL Ⓗ
NR BIAS	NR BIAS
NTSC [L]	NTSC Ⓛ
OCH	CONTROL AGC CIRCUIT
OUT	OUTPUT

P-OFF [H]	POWER OFF Ⓗ
P-OFF [L]	POWER OFF Ⓛ
P. FAIL	POWER FAILURE DETECT
P. OFF [H]	POWER OFF Ⓗ
P. OFF [L]	POWER OFF Ⓛ
PAL [H]	PAL Ⓗ
PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
PB ADJ OUT	PLAYBACK ADJUST OUTPUT
PB OUT	PLAYBACK OUTPUT
PB. H	PLAYBACK Ⓗ
PFG	PG/FG
PHOTSN +B	PHOTO SENSOR +B
PICT. CNT	PICTURE CONTROL
PLAY LED/RVS LED	PLAY LED/REVERSE LED
PLAY. PO	PLAY POSITION
PLAY/R. LED	PLAY LED/REVERSE LED
PLY/DEW	PLAY/DEW Ⓗ
POWER OFF [L]	POWER OFF Ⓛ
PREROLL [H]	PREROLL Ⓗ
PWRFAIL	POWER FAILURE DETECT
R. CH [H]	Rch Ⓗ
R. CH [L]	Rch Ⓛ
R. ST	RESET
R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
RCH [H]	Rch Ⓗ
REC 12V	RECORDING 12V
REC CHROMA	RECORDING CHROMINANCE SIGNAL
REC H	RECORDING Ⓗ
REC IN	RECORDING INPUT
REC OUT [L]	RECORDING OUTPUT Ⓛ
REC START	RECORDING START
REC VR [C]	RECORDING VOLUME (COMMON)
REC VR [L]	RECORDING VOLUME (L)
REC VR [R]	RECORDING VOLUME (R)
REC Y	RECORDING LUMINANCE SIGNAL
REC [H]	RECORDING Ⓗ
REC. C	RECORDING CHROMINANCE SIGNAL
REC. Y	RECORDING LUMINANCE SIGNAL
REC/EE CTL	RECORDING/EE CONTROL
REEL-T	REEL PULSE (TAKE-UP)
REEL-S	REEL PULSE (SUPPLY)
REGULATOR FILTER	REGULATOR FILTER
RESET	RESET
REV M F/R	REVIEW MOTOR FORWARD/REVERSE
REV M V1	REVIEW MOTOR V1
REV M V2	REVIEW MOTOR V2
REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
REV MOTOR V1	REVIEW MOTOR V1
REV MOTOR V2	REVIEW MOTOR V2
REV MOTOR [+]	REVIEW MOTOR (+)
REV MOTOR [–]	REVIEW MOTOR (+)
REV. M. GND	REVIEW MOTOR GND
RF. CHROMA	RF CHROMINANCE SIGNAL

RF OUT	RF OUTPUT
RF Y	RF LUMINANCE SIGNAL
RF. Y. IN	RF LUMINANCE SIGNAL INPUT
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT
ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [–]	SOLENOID (–)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	REFERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

For your safety please read the following text carefully

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstance should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

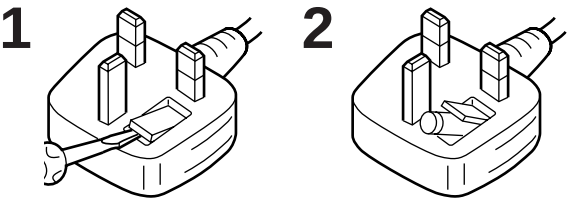
How to replace the Fuse

- There are two types of the AC Mains Lead assembly: **A** and **B** as shown below.

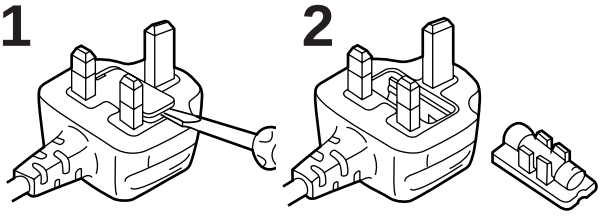
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

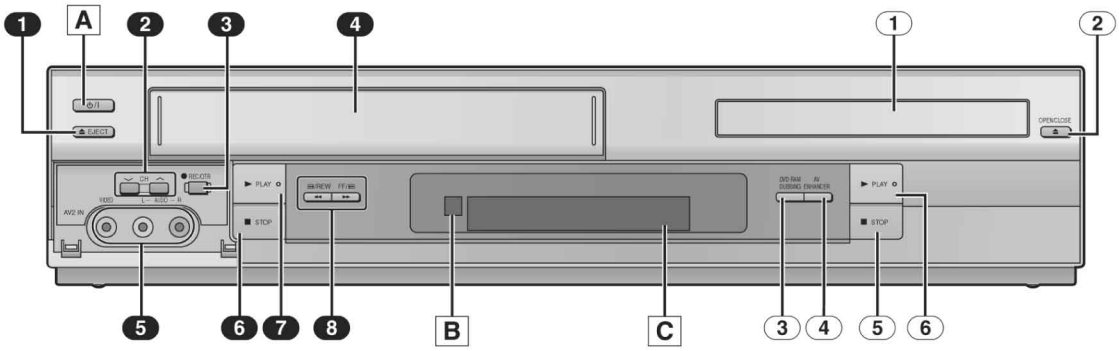
TYPE A



TYPE B



Main Unit



Common section

A **Power button (⏻/I)**
Press **[⏻/I]** to switch this unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the main AC power.

B **Infra-red remote control receiver window**

C **Display**

VHS section

1 **Tape eject button (▲EJECT)** ..... (➜ 14)

2 **Channel up/down buttons (CH∧∨)** ..... (➜ 15, 16)

3 **Recording/One-Touch Recording button (●REC/OTR)** ..... (➜ 16, 17)

4 **Cassette compartment**

5 **AV2 IN (AUDIO/VIDEO) sockets** ..... (➜ 17)

6 **STOP■ button** ..... (➜ 14)

7 **PLAY► button** ..... (➜ 14)

8 **Fast-forward/rewind buttons (◄◄/REW FF/►►, ◄◄ ►►)** ..... (➜ 14)

DVD section

1 **Disc tray**

2 **Disc tray open/close button (OPEN/CLOSE▲)** ..... (➜ 26)

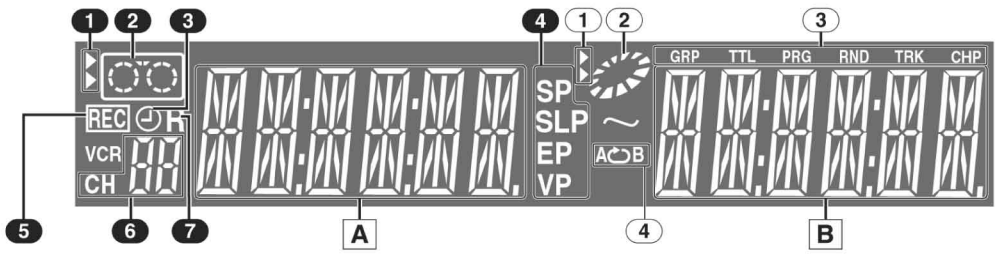
3 **DVD-RAM DUBBING button** ..... (➜ 42)

4 **AV ENHANCER button** ..... (➜ 29)

5 **STOP■ button** ..... (➜ 26)

6 **PLAY► button** ..... (➜ 26)

The Unit's Display



Common section

A **Main display**
- Current time/VHS recording and play counter/Timer recording start time/Miscellaneous messages, etc.

B **Main display**
- Disc play counter/Timer recording end time/Disc type (➜ 5)/ Miscellaneous messages, etc.

PL: play list number
PG: programme number
C: contents number (HighMAT discs ➜ 33)
G: group number (HighMAT discs ➜ 33)

VHS section

1 **VHS selector indicator**
- Lights up when the VHS section is active. It flashes for about 5 seconds immediately after selection is made.

2 **Operation status of VHS section**
Lights up when a cassette is inserted.
- Flashes when recording or timer recording is attempted with no cassette inserted.
- Displays play status graphically.
Rotating: playing
Stopped: paused

3 **Timer programme recording indicator** ..... (➜ 18)

4 **Recording mode indicator** ..... (➜ 16)

5 **Recording indicator** ..... (➜ 16)

6 **Channel display** ..... (➜ 16)

7 **Repeat playback indicator** ..... (➜ 14)

DVD section

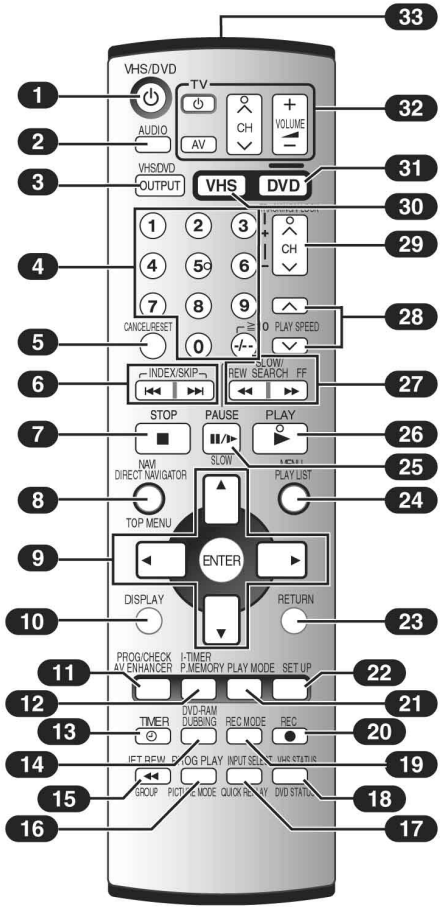
1 **DVD selector indicator**
- Lights up when the DVD section is active. It flashes for about 5 seconds immediately after selection is made.

2 **Operation status of DVD section**
- Lights up when a disc is inserted.
- Displays play status graphically.
Rotating: playing
Stopped: paused

3 **The display mode of the main display section**
GRP: group number
TTL: title number
PRG: Lights up during programme play.
RND: Lights up during random play.
TRK: track number
CHP: chapter number

4 **A-B repeat indicator**
- Lights up during A-B repeat play.
*During repeat play, only ↻ is lit.

Remote Control



■[DVD] and [VHS] button

[VHS]

- Switch the remote control mode and main unit's common output to VHS provided that OUT[VHS/DVD] section is AUTO.

[DVD]

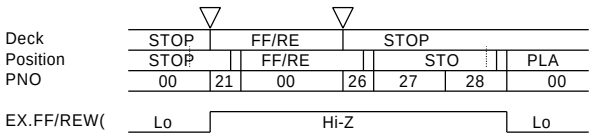
- Switch the remote control mode and main unit's common output to DVD provided that OUT[VHS/DVD] section is AUTO.

1. **VHS/DVD Power button (VHS/DVD⏻)** .....(➜ 14, 26)
2. **Audio button (AUDIO)** .....(➜ 25, 34)
3. **VHS/DVD Output Switch button (OUTPUT, VHS/DVD)** .....(➜ 12)
4. **Numeric buttons (0–9, – /– –, ≧10)** .....(➜ 16, 27, 28)
5. **Cancel/Reset button (CANCEL/RESET)** .....(➜ 19, 25)
6. **Index Search, Skip buttons (INDEX/SKIP ⏮ ⏭)** .....(➜ 21, 26)
7. **Stop button (STOP■)** .....(➜ 14, 26)
8. **Jet Navigator, Direct Navigator/Top Menu button (NAVI, DIRECT NAVIGATOR, TOP MENU)** ..(➜ 20, 31, 32)
9. **Cursor, Enter button (▲▼◄ ►, ENTER)** .....(➜ 12, 22, 38, 40)
10. **Display/On-Screen Menu Icon button (DISPLAY)** .....(➜ 25, 38)
11. **Timer Programming and Check, AV Enhancer button (PROG/CHECK, AV ENHANCER)** .....(➜ 18, 19, 29)
12. **Intelligent Timer, Position Memory button (I-TIMER, P. MEMORY)** ..... (➜ 19, 27)
13. **Timer Recording button (TIMER◴)** .....(➜ 18)
14. **DVD-RAM Dubbing button (DVD-RAM DUBBING)** .(➜ 42)
15. **Jet Rewind, Group button (JET REW◄◄, GROUP)** .....(➜ 14, 28)
16. **Easy Programme Playback, Picture Mode button (PROG PLAY, PICTURE MODE)** .....(➜ 21, 29)
17. **Input Select, Quick Replay button (INPUT SELECT, QUICK REPLAY)**.....(➜ 17, 28, 42)
18. **VHS/DVD Status button (VHS STATUS, DVD STATUS)** .....(➜ 25, 26)
19. **Recording mode button (REC MODE)** .....(➜ 16)
20. **Recording button (REC●)** .....(➜ 16)
21. **Play mode button (PLAY MODE)** .....(➜ 38)
22. **DVD Setup menu button (SETUP)**.....(➜ 40)
23. **Return button (RETURN)** .....(➜ 13, 31, 35, 38, 40)
24. **Menu, Play List button (MENU, PLAY LIST)** .(➜ 12, 22, 31)
25. **Pause/Slow, Still button (PAUSE, SLOW❚❚/►)** ...(➜ 14, 26)
26. **Play button (PLAY►)** .....(➜ 14, 26)
27. **Rewind/Fast-Forward, Slow/Search buttons (REW, FF, SLOW, SEARCH◄◄ ►►)** .....(➜ 14, 26)
28. **Play Speed buttons (PLAY SPEED∧∨)** .....(➜ 30)
29. **Tracking/V-Lock and Channel up/down buttons (TRACKING/V-LOCK, CH∧∨)**.....(➜ 15, 16)
30. **VHS Select button (VHS)** .....(➜ LEFT)
31. **DVD Select button (DVD)**.....(➜ LEFT)
32. **TV Operation buttons**
    TV on/off button (TV⏻)
    TV Input Mode Selector (AV)
    Channel up/down buttons (TV, CH∧∨)
    Volume up/down buttons (TV, VOLUME+ −)
33. **Infra-red Transmitter**

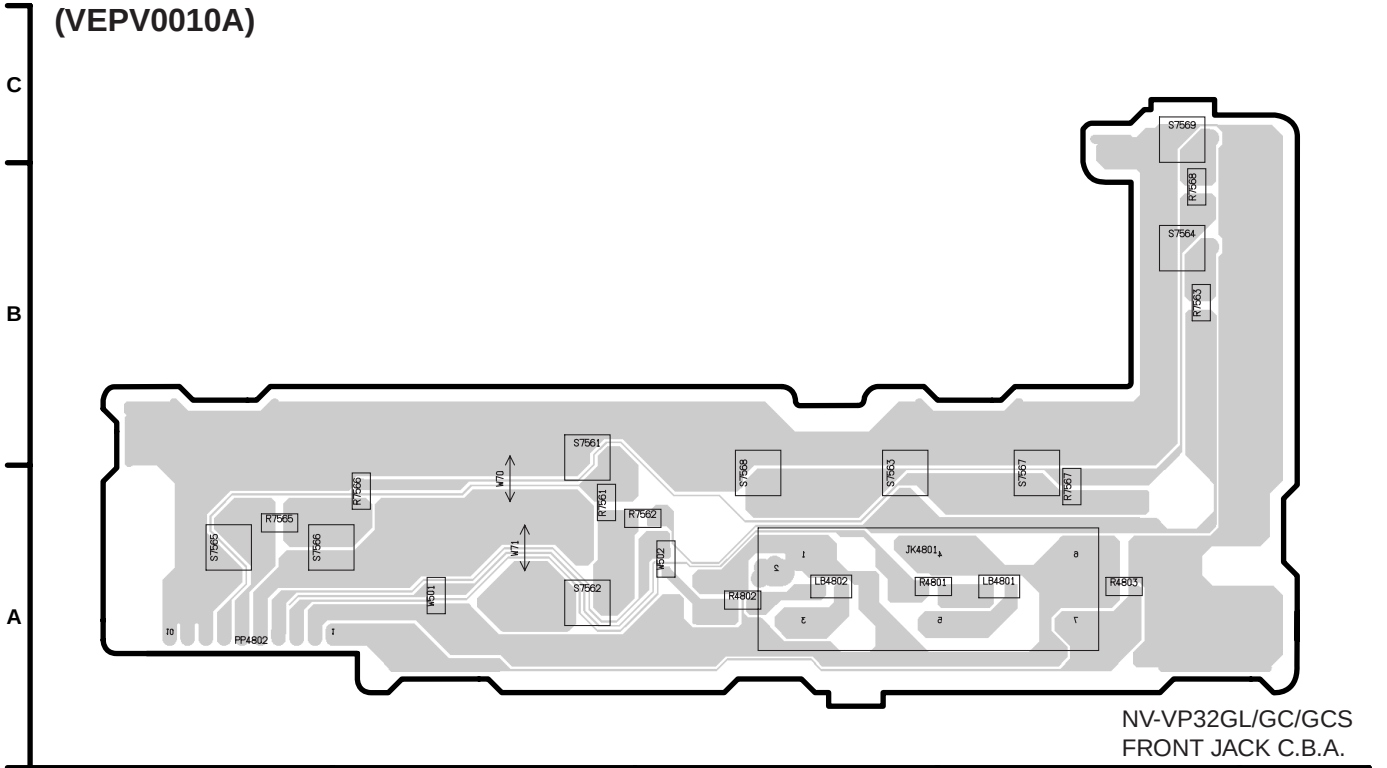
26	BIAS(H)	O	Linear Audio record timing terminal When recording linear audio, take (H) as output Output mode: REC,(ADUB,AV-INSERT) When start recording, set BIAS(H), R.REC(H) output range 140~160msec recording time When finish recording, BIAS(L) = Output, D.REC(L) Time = 0 ~ 20 msec	Low	Low	Low
27	S.TAB(L)	I	SAFETY TAB DETECTION INPUT WITH Safety Tab: Input = Low Without Safety Tab: Input = High	In	In	In
28	FM.MUTE(H)	O	Audio Mute Output terminal During P.Off,Head cleaning,Timer Standby,and VPS/PDC Standby, (After canceling these modes,take (L) as the output after delayed time= 600msec. During VV,when tape speed is not 1 time speed, Output = High. (Take (L) as the output, after switching over to 1 time speed,and after delayed time = 600msec. Take (H) as the output During switching over of EE/VV, Output = High after interposing the changing point. (Take (L) as the output, after switching over of EE/VV, and delayed time= 600ms. When J.CLK/A.DEF/NOR terminal is A.DEF, Output = High.	High	Hi-z	High
29	SW1	O	AUDIO SYSTEM (TUNER PRESET) select terminal. AUDIO SYSTEM = BG, I: High is Output AUDIO SYSTEM = DK, M: Low is Output	Hi-Z	Hi-Z	Hi-Z
30	POS.SW4	I	Mecha position Input Refer to the mecha timing chart for Input result data control.	In	In	In
31	POS.SW3	I		In	In	In
32	POS.SW2	I		In	In	In
33	POS.SW1	I		In	In	In
34	RESET(L)	I	Reset terminal	In	In	In
35	32KHz.IN	I	Sub clock 32.768KHz osc.input	In	In	In
36	32KHz.OUT	O	Sub clock 32.768KHz osc.output	Out	Out	Out
37	5V(D)	-	Digital port Power Vcc (5V)	-	-	-
38	12MHz.IN	I	Main clock 12/16MHz osc.input.	In	In	In
39	12MHz.OUT	O	Main clock 12/16MHz osc.output.	Out	Out	Out
40	GND(OSC)	-	OSC circuit Digital GND.	-	-	-
41	NC		Unused terminal. Fixed Output = Low	Low	Low	Low
42	NC		Unused terminal.Fixed Output = Low.	Low	Low	Low
43	32K.START(L)	I	Clock source selection terminal during reset start. Connect Vcc(5V), when 12/16 MHz High speed mode Connect to Vss(0V), when 32KHz low speed mode	In	In	In
44	LC.OSC.IN	I	LC osc. Input terminal	In	In	In
45	LC.OSC.OUT	O	LC osc. Output terminal	Out	Out	Out
46	GND	-	Terminal B for testing. (connected to GND)	-	-	-
47	4FC.LPF	I	Internal OSC Connection terminal for sync generator circuit.	In	Low	In
48	FSC.IN	I	Sub carrier (fsc) input terminal for sync generator circuit.	In	Low	In
49	GND(OSD)	-	GND terminal for OSD circuit	-	-	-
50	CVIN	I	Composite Video signal input terminal	In	In	In
51	VSS		Unused terminal. Connected to GND.			
52	CVOUT	O	Composite Video Signal Output Terminal.(Do not use as common port)	Out	Out	Out
53	5V(OSD)	-	OSD circuit Power supply Terminal	-	-	-
54	HLF	I	Slicer LPF Connection Terminal	In	In	In
55	VHOLD	I	Capacitor Connection terminal of Slicer Ref Voltage Generator Circuit	In	In	In
56	CVIN(EDS)	I	Slicer Composite Video Signal Input Terminal.	In	In	In
57	GND	-	Testing terminal A. (Connected to GND)	-	-	-

POS.SW1	POS.SW2	POS.SW3	POS.SW4	Position
0	0	0	0	
0	0	0	1	
0	0	1	0	DOWN
0	0	1	1	R-REW
0	1	0	0	LOAD
0	1	0	1	REV
0	1	1	0	PLAY
0	1	1	1	POFF
1	0	0	0	STOP_R
1	0	0	1	STOP_F
1	0	1	0	
1	0	1	1	
1	1	0	0	FF / REW
1	1	0	1	
1	1	1	0	EJECT
1	1	1	1	

58	DVDIN(H)		Unused terminal			
59	SECAM MIX	O	SECAM CHROMA signal input terminal for SECAM SIGNAL SUPER IMPOSE.	Low	Low	Low
60	CHARA+HEM	O	OSD REC control terminal. 1.During OSD REC. *During OSD character is output (Including Hemming): High is output. *Output than above condition: Low is output. 2.Other than OSD REC: High-Z.	Hi-Z/Low	Hi-Z/Low	Hi-Z/Low
61	SW2	O	AUDIO SYSTEM (TUNER PRESET) select terminal. AUDIO SYSTEM = BG, DK: High is Output. AUDIO SYSTEM = I, M: Low is Output.	Low	Low	Low
62	A.SEARCH (L)	I/O	AGC gain selection signal for tuner CH selection. During digital AFC is working at TUNER PRESET mode: Low (AGC is high speed) Other than above: Hi-Z (AGC is normal speed)	Low	Low	Low
63	VBI2	O	When writing navigator: tape navi data mass pulse (special use) Other than writing : Hi-Z (common use)	Hi-Z	Low	Hi-Z
64	VBI1	O	When writing navigator: tape navi data writing pulse (special use terminal) Other than writing : Hi-Z (common use terminal)	Hi-Z	Low	Hi-Z
65	EEPROM_OUT	O	Used during Navi back-up mode EEPROM control terminal: data output	Low	Low	Low
66	EEPROM_IN	I	Used during Navi back-up mode EEPROM control terminal: data input	In	In	In
67	EEPROM_CLK	O	Used during Navi back-up mode EEPROM control terminal: clock output	Low	Low	Low
68	IC.DATA.OUT	O	Peripheral IC control Timer-Bus signal: data output	(Normal Operation)	Low	Hi-Z
69	IC.DATA.IN	I	Peripheral IC control Timer-Bus signal: data input	(Normal Operation)	In	In
70	IC.DATA.CLK	O	Peripheral IC control Timer-Bus signal: clock output	(Normal Operation)	Low	Hi-Z
71	IIC.CLK	O	AV1 Chip/FM Audio IC serial communication terminal(IIC).	(Normal Operation)	Low	Hi-Z
72	IIC.DATA	I/O	AV1 Chip/FM Audio IC serial communication terminal(IIC).	(Normal Operation)	Low	Hi-Z
73	256Hz/ROM.CORE	O	Since there are 2 function controls,port function is divided into 2 as shown below. (1) Normal mode/Service mode : Fixed Output(NC) = L (2) Test mode: Judge ROM core confirmation. Decide port function. When ROM core confirm mode: ROM.CORE terminal When other than ROM core confirm mode: Main clock Adjustment Internal Osc. Output terminal (3) Test 2 mode:Main clock Adjustment Internal Osc. Output terminal Control method of each port function is shown as below. [ROM .CORE terminal]When ROM collection setting bit = ON, Output = High When ROM collection setting bit = OFF, Output = Low [Main clock Adjuatment Internal Osc. Output terminal] Output : 256Hz	(Normal Operation)	Low	Low
74	CAP R/F	O	Capstan driver rotating direction control RVS = "High", FWD = "Low"	Low	Low	Low
75	P_ON(H)	O	VTR power control terminal. When VTR = Power Off, and, DVD = Power Off, Ouput = Low When VTR peripheral circuit = Power Off/ Timer Standby, Output = Low Even when apparently Power is Off, if Mecha or Peripheral circuit operation is required, output = High If required: Head cleaning, timer confirmation (VPS/PDC standby, ACS) When J.CLK Syscon serial is ON(during J.CLK mode), even if power is off = High	Low	Low	High
76	CAP.ET	O	Capstan motor control voltage supply terminal When higher than Drive Reference Voltage: Accelerated When lower than Drive Reference Voltage : Current off	High PWM= 0V	Low	High PWM= 0V
77	CYL.ET	O	Cylinder Motor Control Voltage Supply terminal When higher than Driver Reference Voltage: current off When lower than Driver Reference Voltage: accelerated However, during Cylinder Off, Max value of decelerated Voltage is as follow. Normal Control : 3.150V Cylinder Off: 5.000V	Low PWM= 5.000V	Low	Low PWM= 5.000V
78	P.FAIL(L)	I	Power Failure Detection Input terminal Input = "L", Power Failure Mode	In	In	In

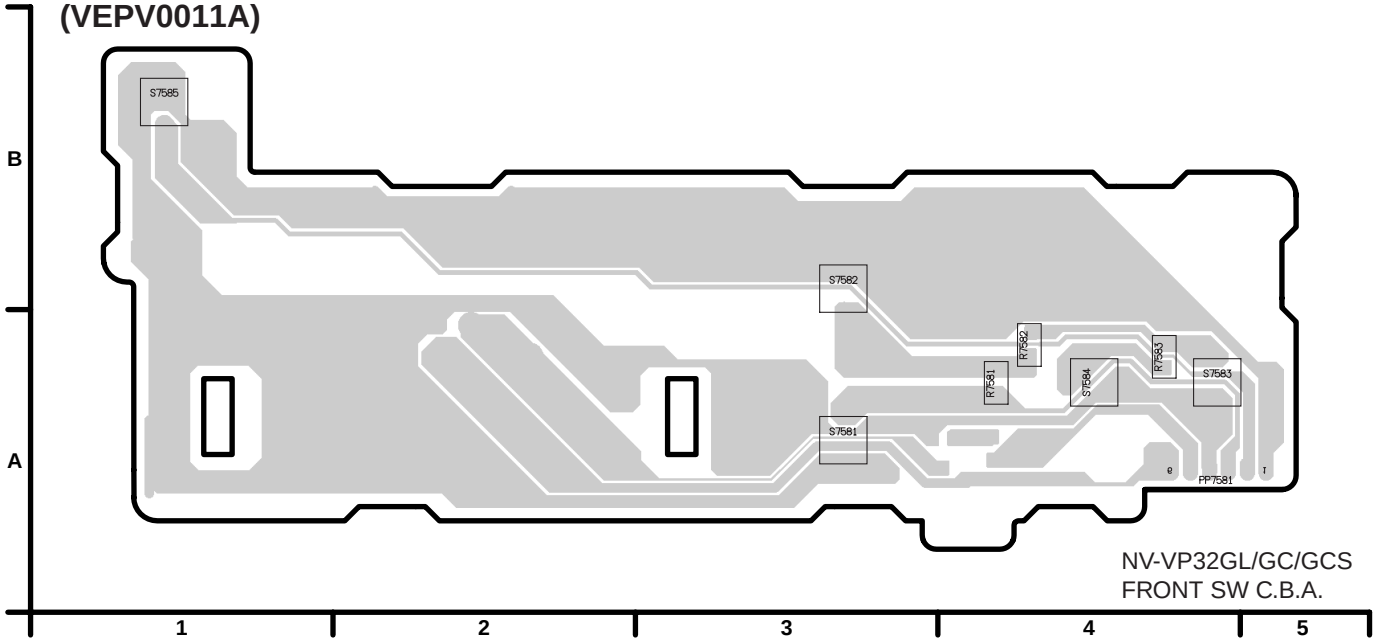
79	S.REEL.PULSE	I	Pulse Input terminal from reel sensor	In	In	In
80	T.REEL.PULSE	I	Pulse Input terminal from reel sensor	In	In	In
81	LP CARTOON (H)		Unused terminal.	Low	Low	Low
82	EX.FF/REW(L)	I/O	Control Signal Filter Selection Terminal during FF/REW Control spec shall comply with Mecha FFREW(Hi-Z) output timing. Set Input when deck enters FF/RRW mode. During Stop, due to FF/REW stopping process, switch over to STOP3 first, then STOP is canceled.  However, when starting FF/REW, Filter C addition will be required until it become high speed. Then monitor the CTL Amp Gain(COH bit 0-2) setting value. When 5(=60dB) or 7(=70dB), compulsorily, output = Low.	Low	Low	Low
83	UNLOADING(H)	O	Loading Motor Control terminal shall comply with R4 mecha control spec.	Low	Low	Low
84	LOADING(H)	O	Loading Motor Control terminal shall comply with R4 mecha control spec.	Low	Low	Low
85	SQPB (H)	I	The distinction results wheter S-VHS or VHS of the playback tape is input in VV mode. *Low is input: VHS tape playback. *High is input: S-VHS tape playback. Note: When the MESECAM (H) terminal receives "High", above result is invalidated and the tape is judged to VHS tape playback.	In	In	In
86	FG.AMP.OUT	O	Capstan FG Amp Signal Output terminal.	Out	Out	Out
87	FG.AMP.IN	I	Capstan FG signal Input Terminal.	In	In	In
88	GND(A)	-	Analog GND.	-	-	-
89	MESECAM (H)	I	Distinction terminal for the VDIEO SYSTEM. 1.In the VV mode. *High is input: Playback of a MESECAM recorded tape. *Low is input: Playback of other than MESECAM recorded tape. 2.In the EE mode. *High is input: Receiving a SECAM broadcast, or SECAM signal is input.	In	In	In
90	CYL.PFG	I	Cylinder P.FG signal Input Terminal.	In	In	In
91	OREF	O	Analog Amp 1/2 Vdd Ref Power Output Terminal	Out	Out	Out
92	IREF	I	Analog Amp 1/2 Vdd Ref Power Input Terminal	In	In	In
93	VSS		Unused terminal. Connected to GND.			
94	CTL.HEAD(-)	I/O	Control head (-)side Input/Output Terminal.	In/Out	In/Out	In/Out
95	CTL.HEAD(+)	I/O	Control head (+)side Input/Output Terminal.	In/Out	In/Out	In/Out
96	CTL.AMP.REF	I	Control Amp Ref Capacitor Connection Terminal	In	In	In
97	PB.CTL.OUT	O	Control Amp Output terminal.	Out	Out	Out
98	5V(A)	-	Analog Amp Power Supply Terminal	-	-	-
99	5V(AD)	-	AD/8 bit DA Ref Power Supply Terminal.	-	-	-
100	T.S. CURVE	I	Input terminal for "S-Curve" of Tuner AFC at channel selecting.	In	In	In

(VEPV0010A)



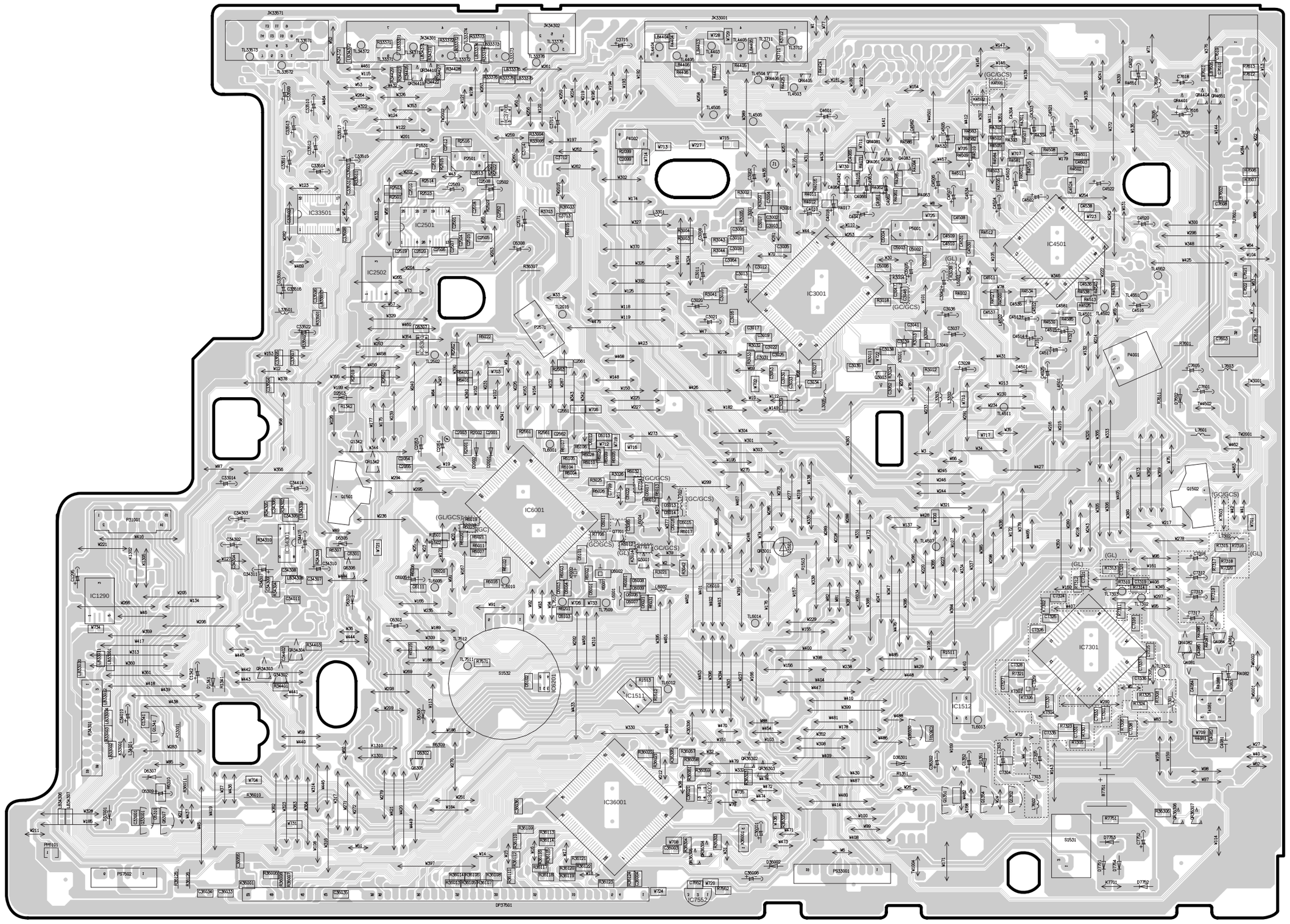
NV-VP32GL/GC/GCS
FRONT JACK C.B.A.

(VEPV0011A)



NV-VP32GL/GC/GCS
FRONT SW C.B.A.

(VEPV0008C:NV-VP32GL)(VEPV0008E:NV-VP32GC)(VEPV0008F:NV-VP32GCS)



NV-VP32GL/GC/GCS
MAIN C.B.A.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

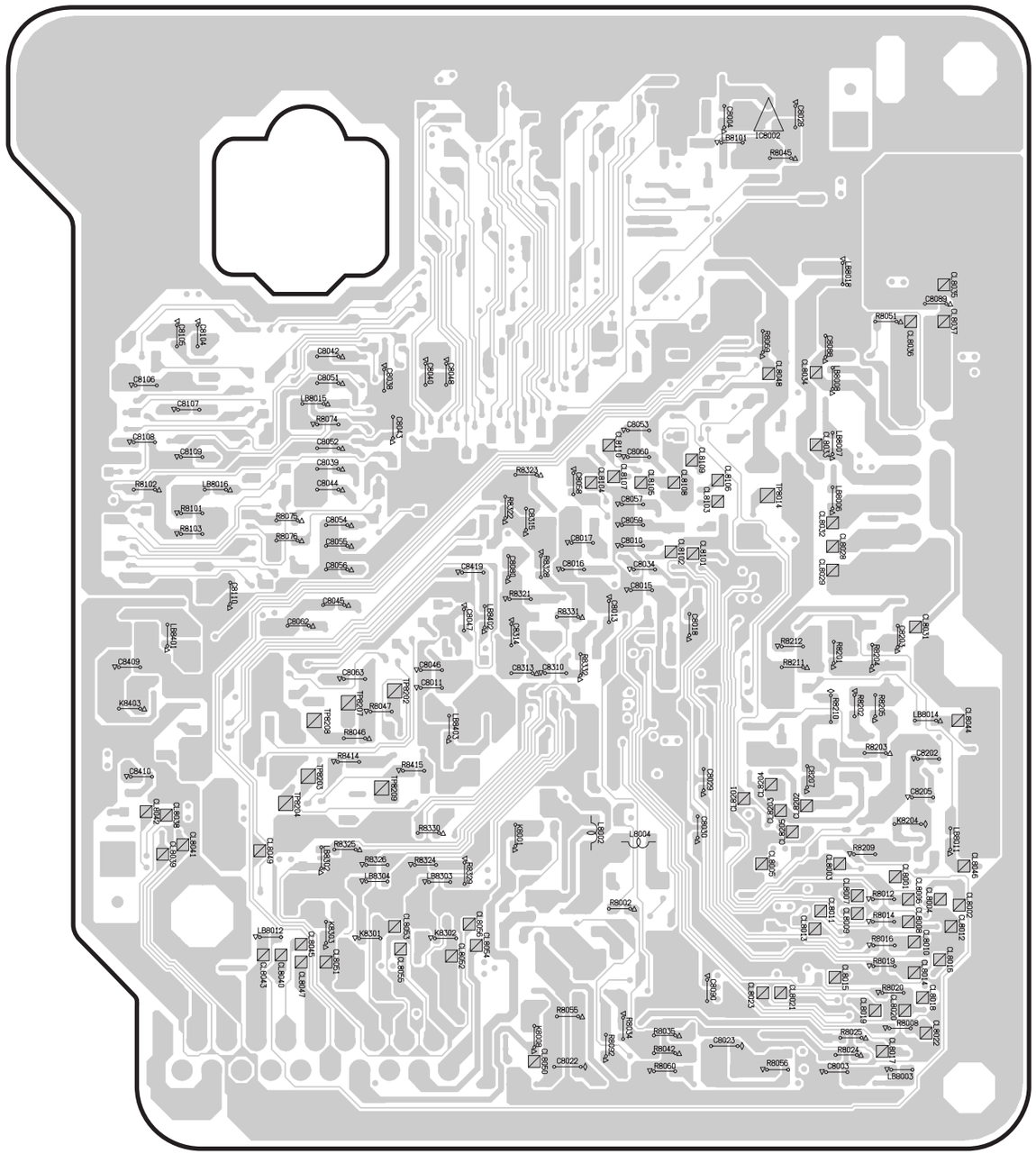
MAIN C.B.A.

Transistor	
Q1341	B-2
Q1342	D-3
Q1351	A-6
Q1352	A-7
Q1354	A-7
Q1501	C-3
Q1502	C-8
Q3001	C-5
Q3003	D-6
Q3702	F-4
Q4081	B-8
Q4082	B-8
Q4083	E-6
Q4084	B-8
Q6305	B-3
Q6306	C-3
Q6307	A-2
Q7701	C-4
Q33001	A-2
Q34003	C-3
Q34004	C-2
Q34302	B-2
Q36330	B-6
Transistor & Resistor	
QR1342	C-3
QR3001	C-5
QR3006	E-5
QR3008	C-5
QR4061	E-6
QR4081	E-6
QR4082	B-8
QR4401	F-8
QR4404	F-8
QR4405	F-6
QR4406	F-5
QR4651	F-8
QR34303	B-2
QR34304	B-2
QR34410	F-3
QR34419	F-3
QR36302	B-5
QR36303	B-5
QR36304	A-5
QR36305	A-5
QR36306	A-8
QR36307	A-8
Integrated Circuit	
IC1290	C-1
IC1511	B-5
IC1512	B-6
IC2501	E-3
IC2502	E-3
IC3001	D-6
IC3701	E-4
IC3703	E-4
IC4501	E-7
IC6001	C-4
IC6201	B-4
IC6301	D-3
IC7301	B-7
IC7552	A-5
IC33501	E-3
IC34301	C-2
IC36001	A-4
IC36002	A-5

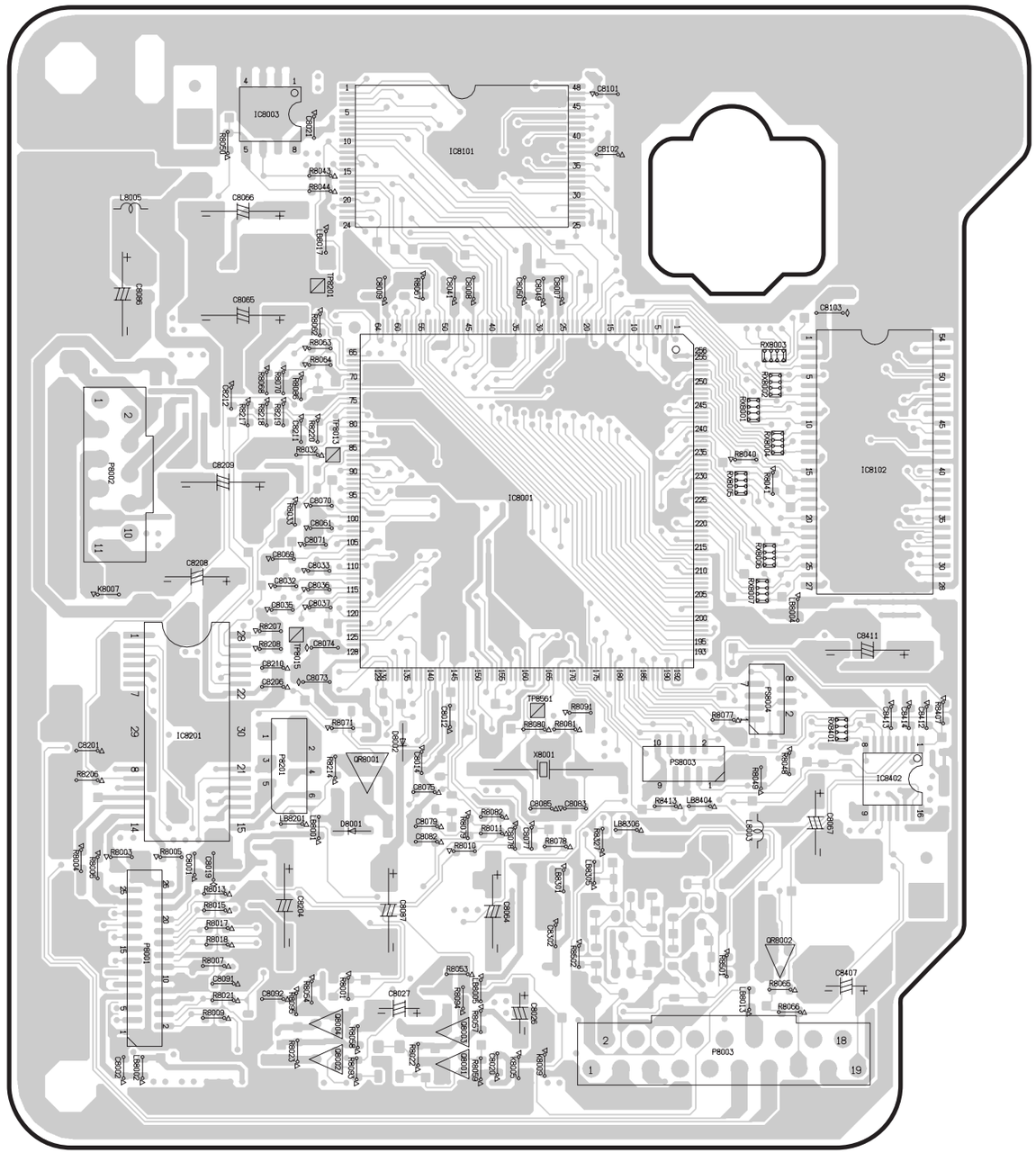
Test Point	
TL2015	D-4
TL2502	D-3
TL3711	F-5
TL3712	F-5
TL4403	F-5
TL4404	F-5
TL4405	F-5
TL4406	F-5
TL4501	D-7
TL4502	D-7
TL4503	F-5
TL4504	F-5
TL4505	E-5
TL4506	E-5
TL4507	C-6
TL4511	D-7
TL4551	D-8
TL4552	D-8
TL6001	D-4
TL6005	C-3
TL6010	C-4
TL6012	B-5
TL6013	B-7
TL6014	B-5
TL7301	B-8
TL7302	C-8
TL7303	C-7
TL7509	C-4
TL7510	C-4
TL7511	B-4
TL7512	B-3
TL33371	F-3
TL33372	F-3
TL33374	F-4
TL33375	F-4
TL33376	F-4
TL33571	F-3
TL33572	F-2
TL33573	F-2
TL34371	F-3
TL34372	F-3
TW1004	A-6
TW2001	D-8
TW2002	E-3
TW2015	E-4
TW3001	D-8
TW4501	E-6
TW4502	D-8
TW6001	B-8
TW6002	B-8
Connector	
P1531	E-3
P2501	E-4
P2571	D-4
P3002	F-6
P4001	D-7
P4002	E-4
P5001	E-6
P31001	C-2
P34301	B-1
PP6101	A-1
PS33001	A-6
PS7502	A-1
TU7601	E-8

ADDRESS INFORMATION

(REPV0030B:NV-VP32GL/GC)(REPV0030C:NV-VP32GCS)



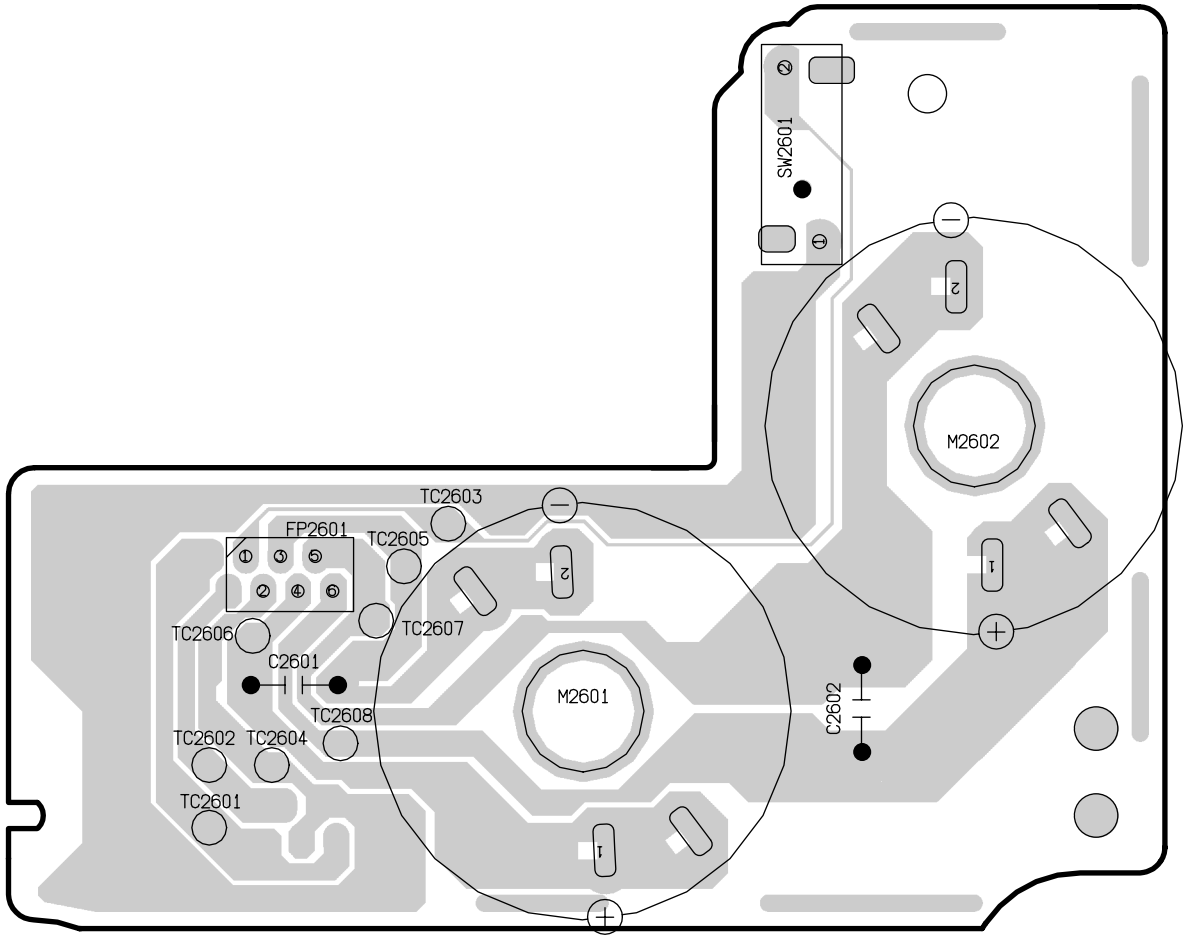
(FOIL SIDE)



(COMPONENT SIDE)

NV-VP32GL/GC/GCS
DVD MODULE C.B.A.

(REP3606A-C)



NV-VP32GL/GC/GCS
MOTOR C.B.A.

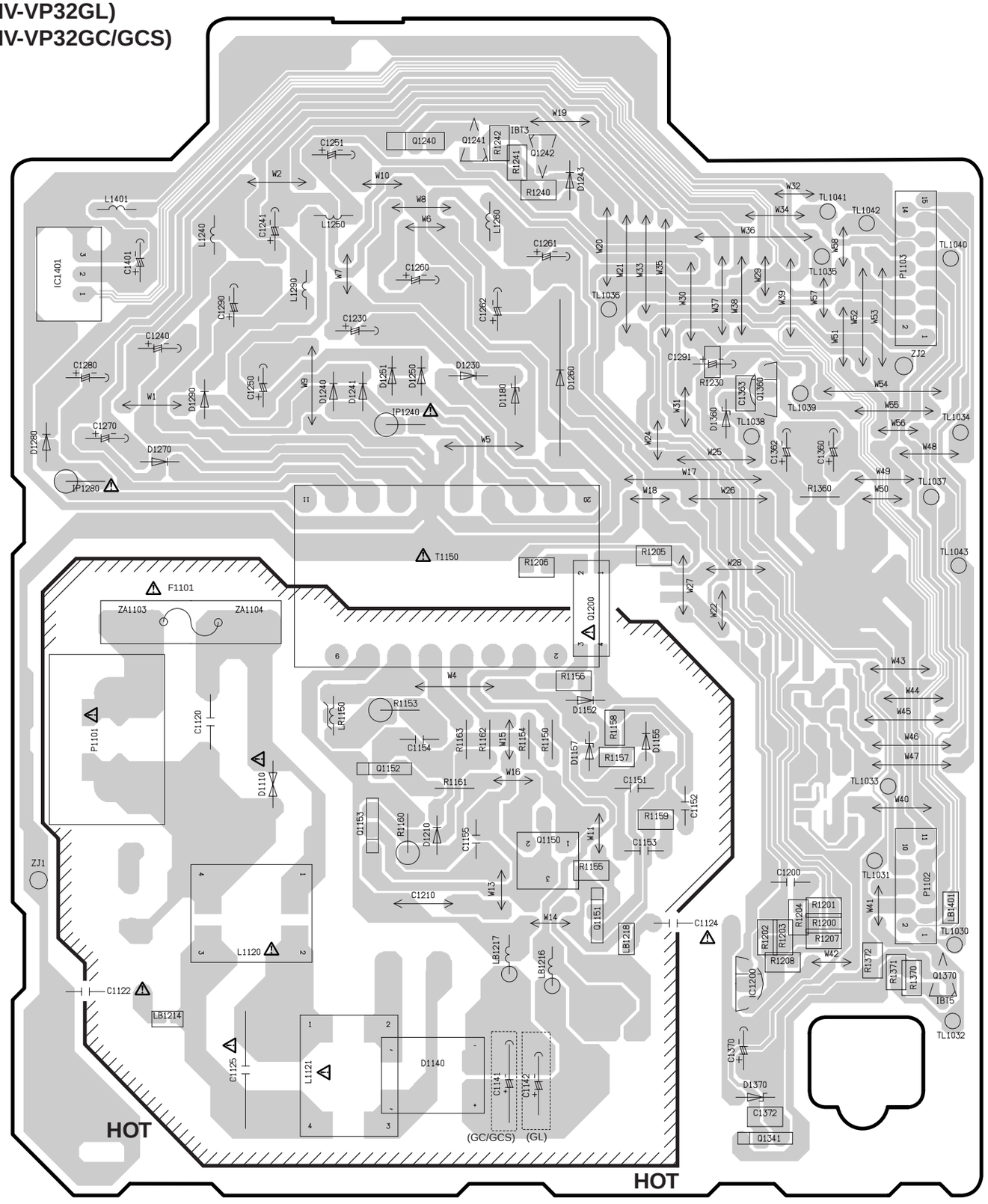
D C B A

1 2 3 4

DVD MODULE C.B.A.					
Transistor			**Test Point**		
Q8001	A-7	C	CL8040	B-2	F
Q8002	A-6	C	CL8041	B-2	F
Q8003	A-7	C	CL8042	B-1	F
Q8004	A-6	C	CL8043	B-2	F
Transistor & Resistor			CL8044	C-5	F
QR8001	B-7	C	CL8045	B-2	F
QR8002	B-8	C	CL8046	B-5	F
Integrated Circuit			CL8047	B-2	F
IC8001	D-7	C	CL8048	D-4	F
IC8002	E-4	F	CL8049	B-2	F
IC8003	E-6	C	CL8050	A-3	F
IC8101	E-7	C	CL8051	B-2	F
IC8102	D-9	C	CL8052	B-3	F
IC8201	C-6	C	CL8053	B-2	F
IC8402	B-9	C	CL8054	B-3	F
Test Point			CL8055	B-2	F
CL8001	B-4	F	CL8056	B-3	F
CL8002	B-5	F	CL8101	C-4	F
CL8003	B-4	F	CL8102	C-3	F
CL8004	B-5	F	CL8103	C-4	F
CL8005	B-4	F	CL8104	D-3	F
CL8006	B-4	F	CL8105	D-3	F
CL8007	B-4	F	CL8106	D-4	F
CL8008	B-4	F	CL8107	D-3	F
CL8009	B-4	F	CL8108	D-3	F
CL8010	B-4	F	CL8109	D-4	F
CL8011	B-4	F	CL8110	D-3	F
CL8012	B-5	F	CL8201	B-4	F
CL8013	B-4	F	CL8202	B-4	F
CL8014	B-4	F	CL8203	B-4	F
CL8015	B-4	F	CL8204	B-4	F
CL8016	B-5	F	CL8205	B-4	F
CL8017	A-4	F	TP8013	D-6	C
CL8018	A-4	F	TP8014	D-4	F
CL8019	A-4	F	TP8015	C-6	C
CL8020	A-4	F	TP8201	D-6	C
CL8021	B-4	F	TP8202	C-2	F
CL8022	A-4	F	TP8203	B-2	F
CL8023	B-4	F	TP8204	B-2	F
CL8028	C-4	F	TP8207	C-2	F
CL8029	C-4	F	TP8208	C-2	F
CL8031	C-4	F	TP8209	B-2	F
CL8032	C-4	F	TP8561	C-7	C
CL8033	D-4	F	**Connector**		
CL8034	D-4	F	P8001	B-6	C
CL8035	D-5	F	P8002	D-6	C
CL8036	D-4	F	P8003	A-8	C
CL8037	D-5	F	P8201	B-6	C
CL8038	B-1	F	PS8003	B-8	C
CL8039	B-1	F	PS8004	C-8	C

ADDRESS INFORMATION

(VEPV0012A:NV-VP32GL)
(VEPV0012B:NV-VP32GC/GCS)



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

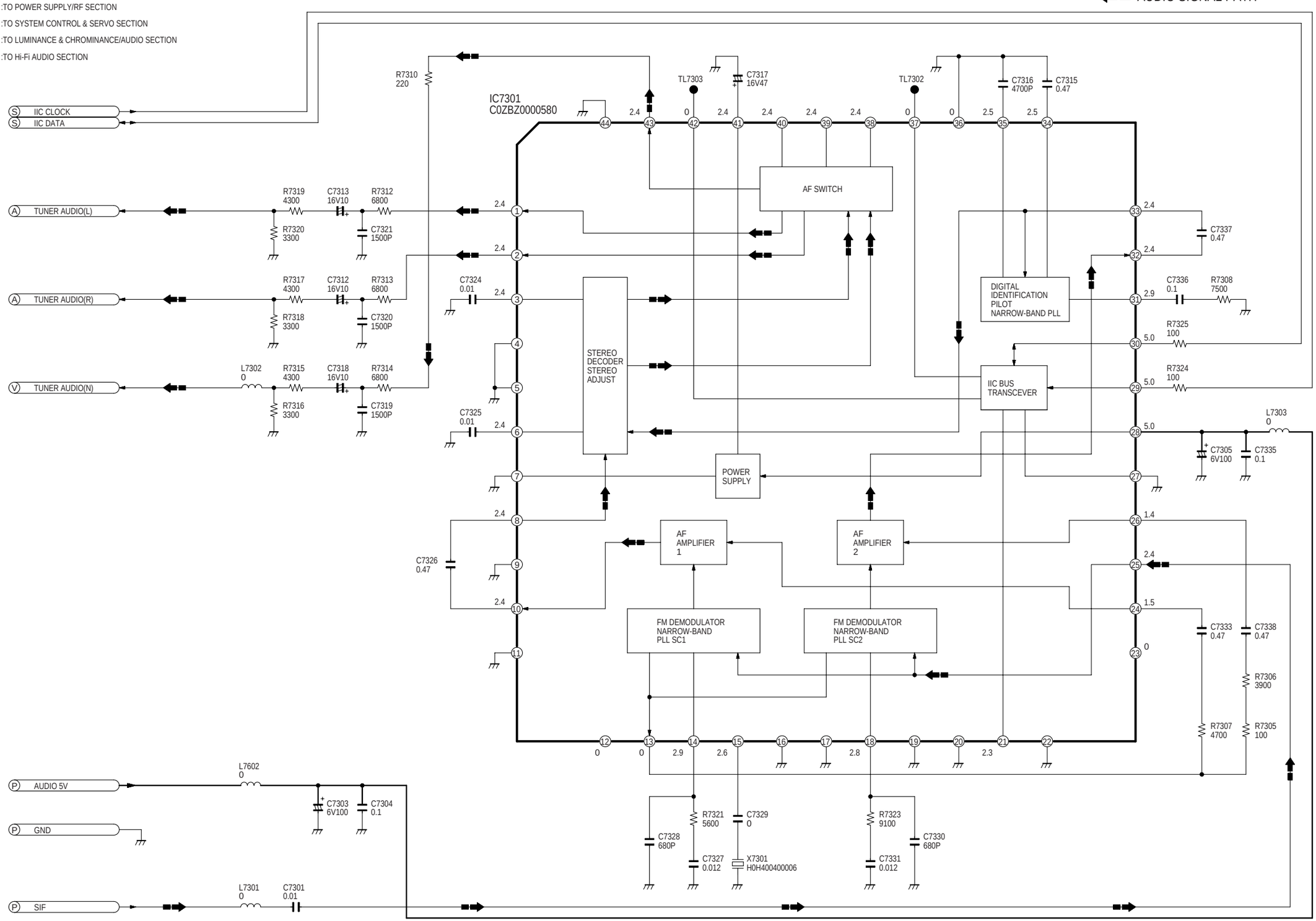
POWER C.B.A.			
Transistor		**Test Point**	
Q1150	B-4	TL1030	B-6
Q1151	B-4	TL1031	B-6
Q1152	C-3	TL1032	B-6
Q1153	C-3	TL1033	C-6
Q1200	D-4	TL1034	D-6
Q1240	F-3	TL1035	E-5
Q1241	F-4	TL1036	E-4
Q1242	F-4	TL1037	D-6
Q1341	A-5	TL1038	D-5
Q1360	E-5	TL1039	E-5
Q1370	B-6	TL1040	E-6
Integrated Circuit		TL1041	E-5
IC1200	B-5	TL1042	E-6
IC1401	E-2	TL1043	D-6
		Connector	
		P1101	C-2
		P1102	B-6
		P1103	E-6

ADDRESS INFORMATION

NV-VP32GL/GC/GCS
POWER C.B.A.

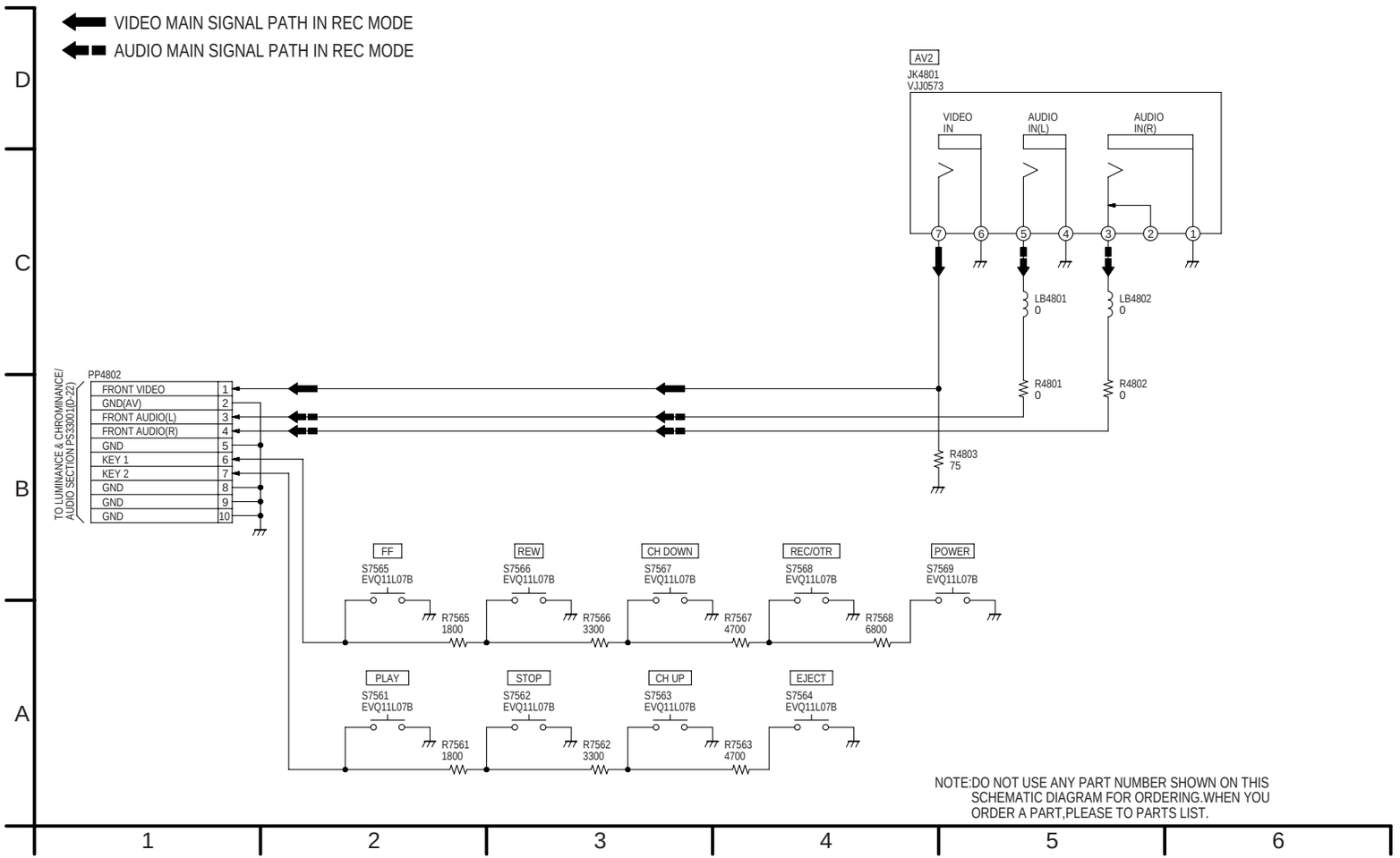
AUDIO SIGNAL PATH

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION

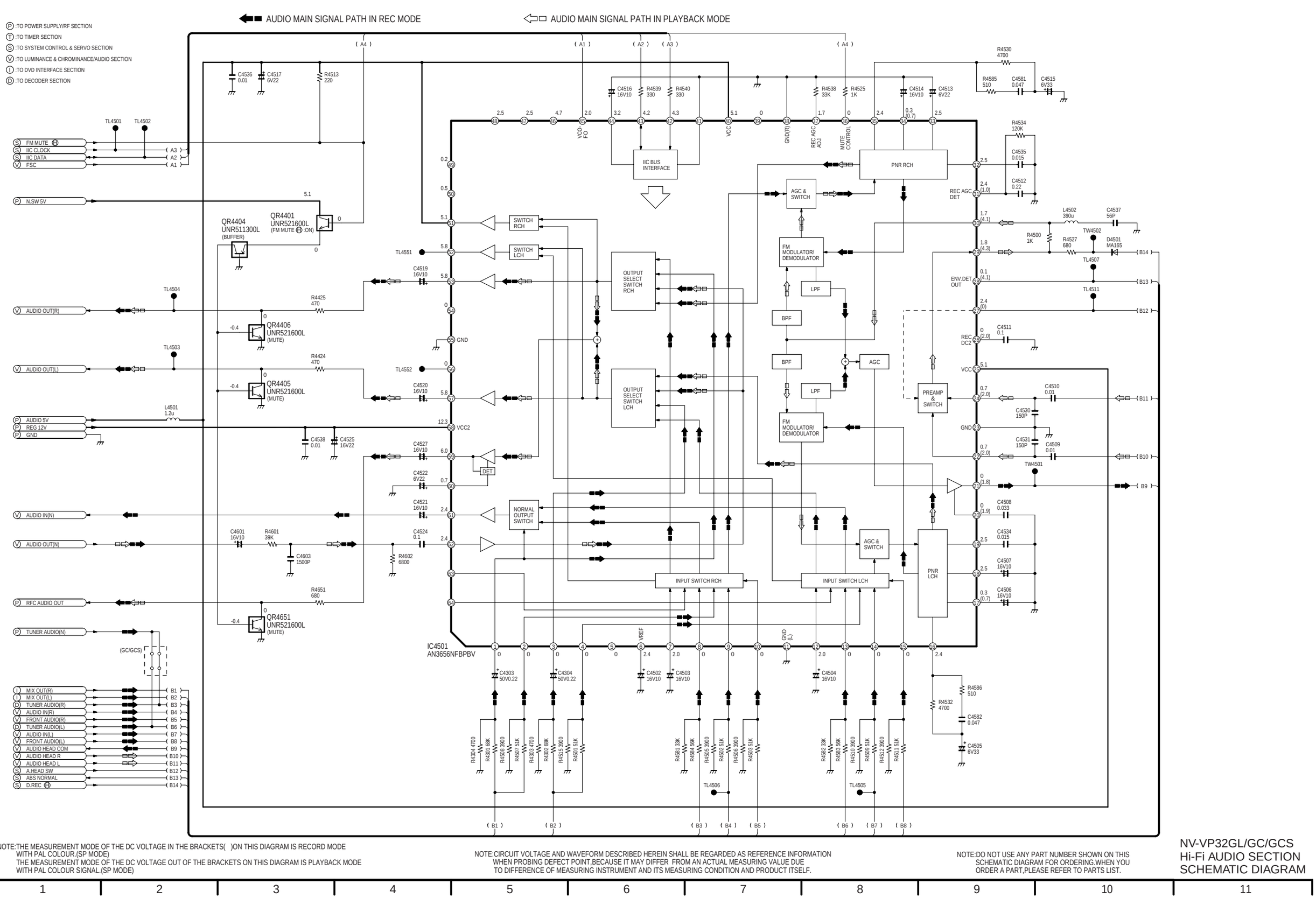


NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL
DECODER SECTION SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
FRONT JACK SCHEMATIC DIAGRAM

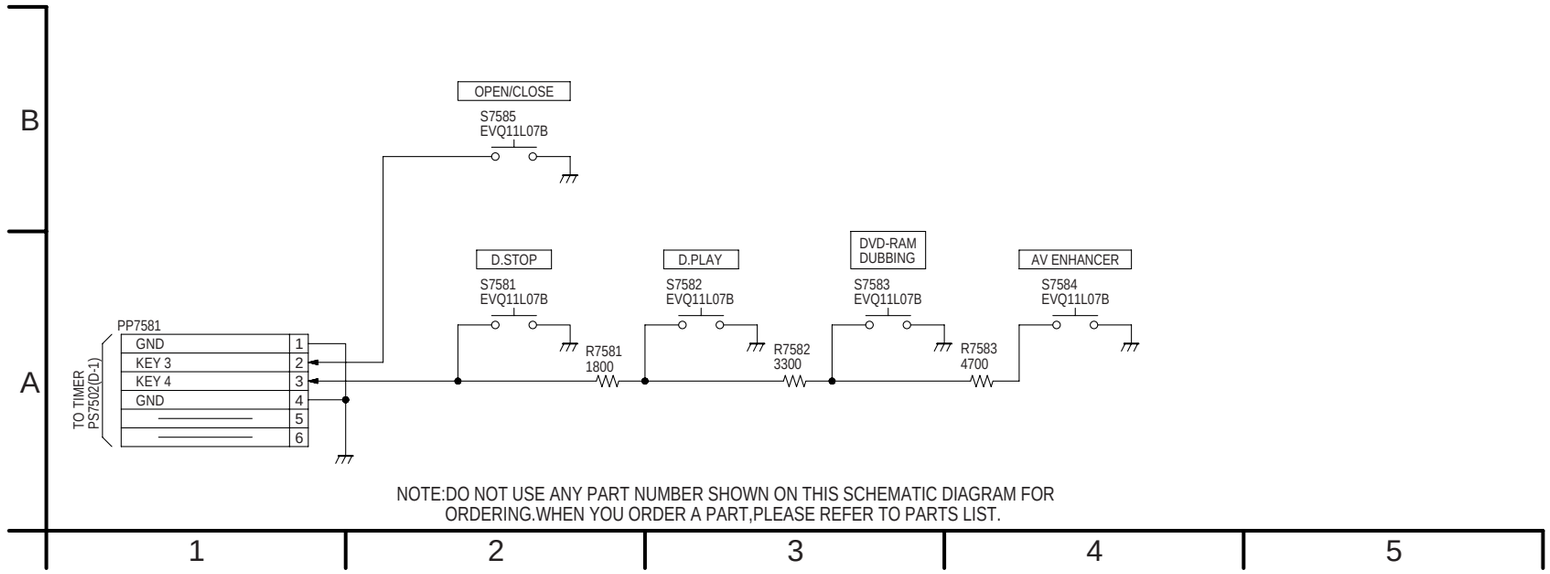


NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR.(SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
Hi-Fi AUDIO SECTION
SCHEMATIC DIAGRAM



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
FRONT SW SCHEMATIC DIAGRAM

VCR VIDEO MAIN SIGNAL PATH IN REC MODE
VCR AUDIO MAIN SIGNAL PATH IN REC MODE
DVD VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
DVD AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

(P) :TO POWER SUPPLY/RF SECTION
(T) :TO TIMER SECTION
(V) :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
(A) :TO Hi-Fi AUDIO SECTION

IC33501
AN13330A-VF

IC34301
NJM4558M

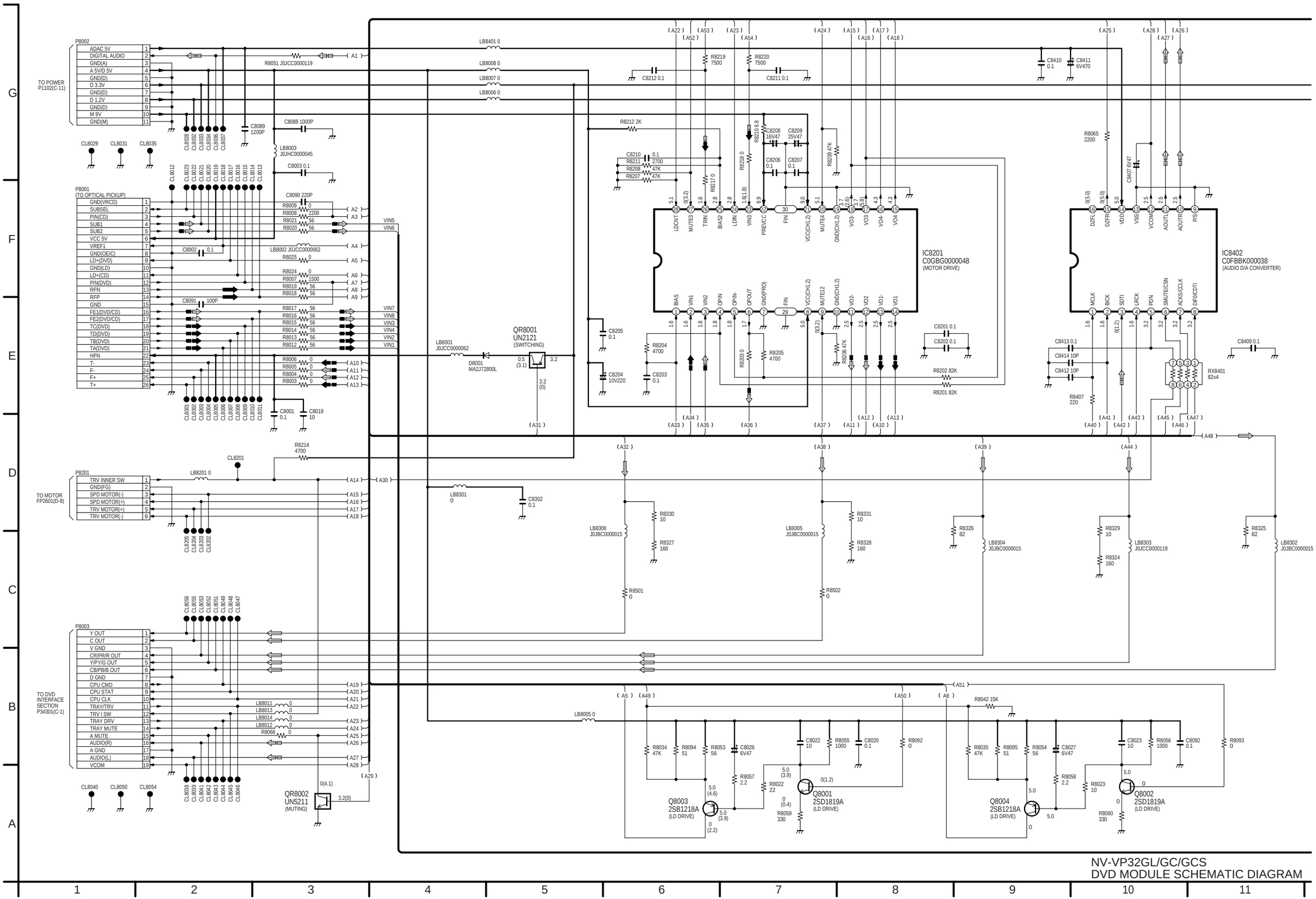
QR34419 UN5215 (MUTE)
QR34410 UN5215 (MUTE)
QR34304 UN2111 (BUFFER)
QR34303 UN2211 (INV.)
Q34302 2SD601A (SWITCHING)

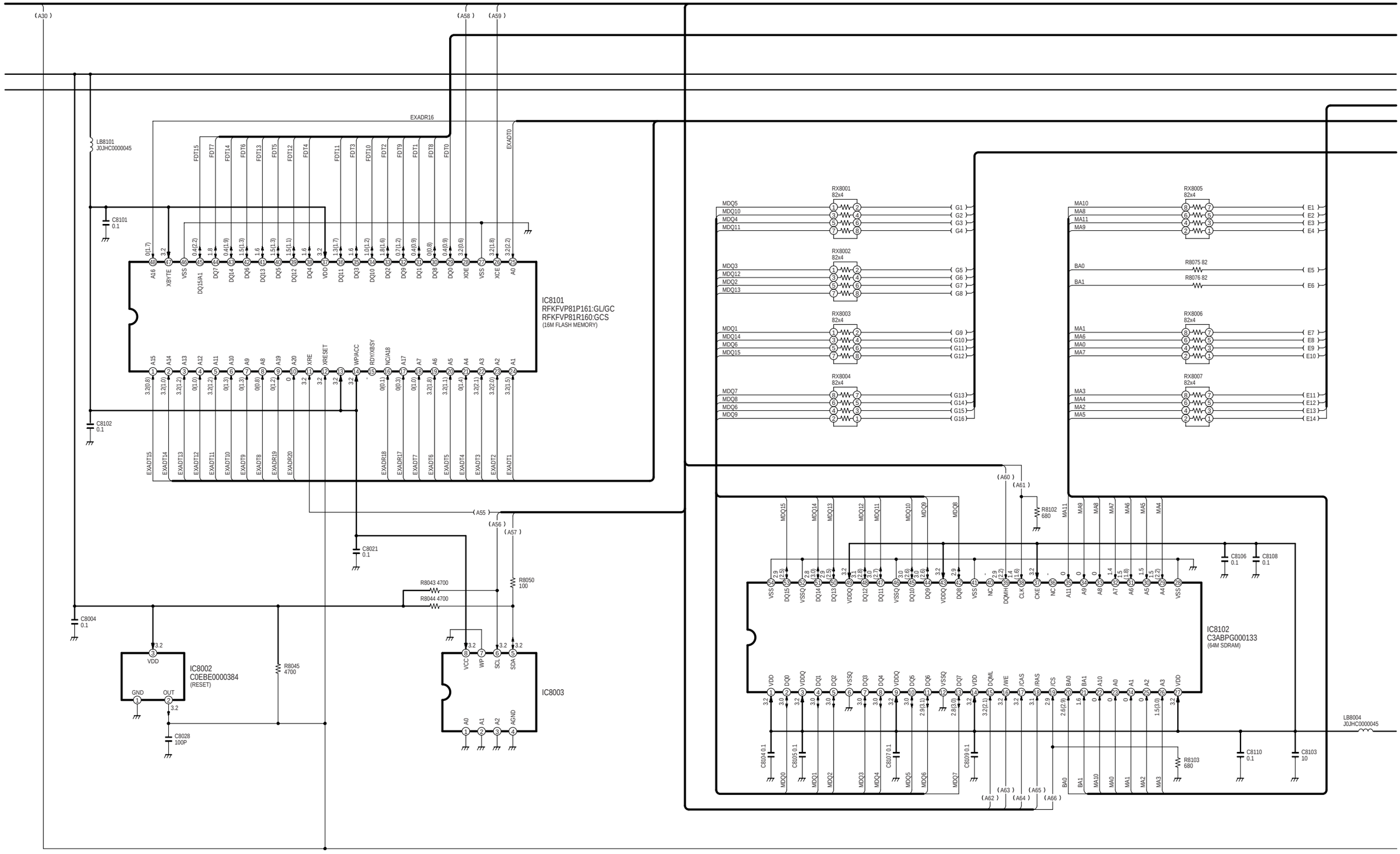
DVD OUT JK34301 K2HA612B0052
DVD S VIDEO OUT JK34302 K1CB105B0042

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
DVD INTERFACE SECTION SCHEMATIC DIAGRAM


P8002
ADAC 5V
DIGITAL AUDIO
GND(A)
A 5V/D 5V
GND(D)
D 3.3V
GND(D)
D 1.2V
GND(D)
M 9V
GND(M)
TO POWER P1102(C-11)
P8001 (TO OPTICAL PICKUP)
GND(VRCD)
SUBSEL
PIN(CD)
SUB1
SUB2
VCC 5V
VREF1
GND(OEIC)
LD+(DVD)
GND(LD)
LD+(CD)
PIN(DVD)
RFN
RFP
GND
FE1(DVD/CD)
FE2(DVD/CD)
TC(DVD)
TD(DVD)
TB(DVD)
TA(DVD)
HFN
T-
F-
F+
T+
P8201
TRV INNER SW
GND(FG)
SPD MOTOR(-)
SPD MOTOR(+)
TRV MOTOR(+)
TRV MOTOR(-)
TO MOTOR FP2601(D-8)
P8003
Y OUT
C OUT
V GND
CR/PR/R OUT
Y/PY/G OUT
CB/PB/B OUT
D GND
CPU CMD
CPU STAT
CPU CLK
TRAY/TRV
TRV I SW
TRAY DRV
TRAY MUTE
A MUTE
AUDIO(R)
A GND
AUDIO(L)
VCOM
TO DVD INTERFACE SECTION P34301(C-1)
IC8201
C0GBGC0000048
(MOTOR DRIVE)
IC8402
C0FBBK000038
(AUDIO D/A CONVERTER)
QR8001
UN2121
(SWITCHING)
QR8002
UN5211
(MUTING)
Q8001
2SD1819A
(LD DRIVE)
Q8002
2SD1819A
(LD DRIVE)
Q8003
2SB1218A
(LD DRIVE)
Q8004
2SB1218A
(LD DRIVE)
RX8401
82x4
NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

RF SIGNAL PATH
VIDEO MAIN SIGNAL PATH
AUDIO MAIN SIGNAL PATH
MOTOR DRIVE SIGNAL PATH
TRACKING ERROR SIGNAL PATH
FOCUS ERROR SIGNAL PATH

IC8001
MN2DS0005VP
(DV LSI)

PS8004
(TEST TERMINAL FOR DEBUG)
8 GND
7 TRCST
6 TRCD(3)
5 TRCD(2)
4 TRCD(1)
3 TRCD(0)
2 GND
1 TRCCLK

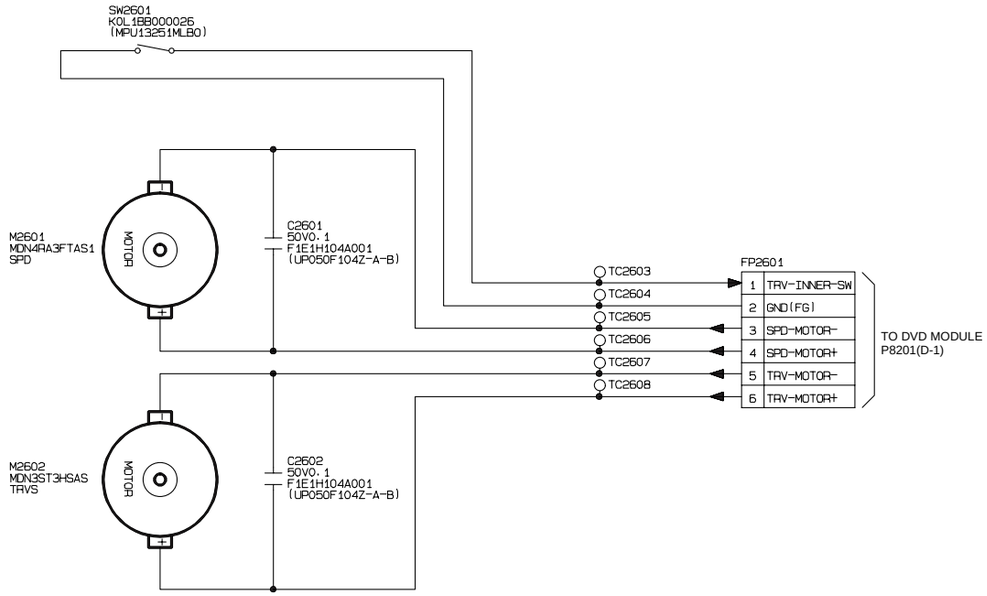
PS8003
(TEST TERMINAL FOR PROGRAM)
1 DGND
2 SDATA
3 KMODE
4 EXTRG0
5 DGND
6 SCLOCK
7 DGND
8 NRESET
9 VDD
10 VDD

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM



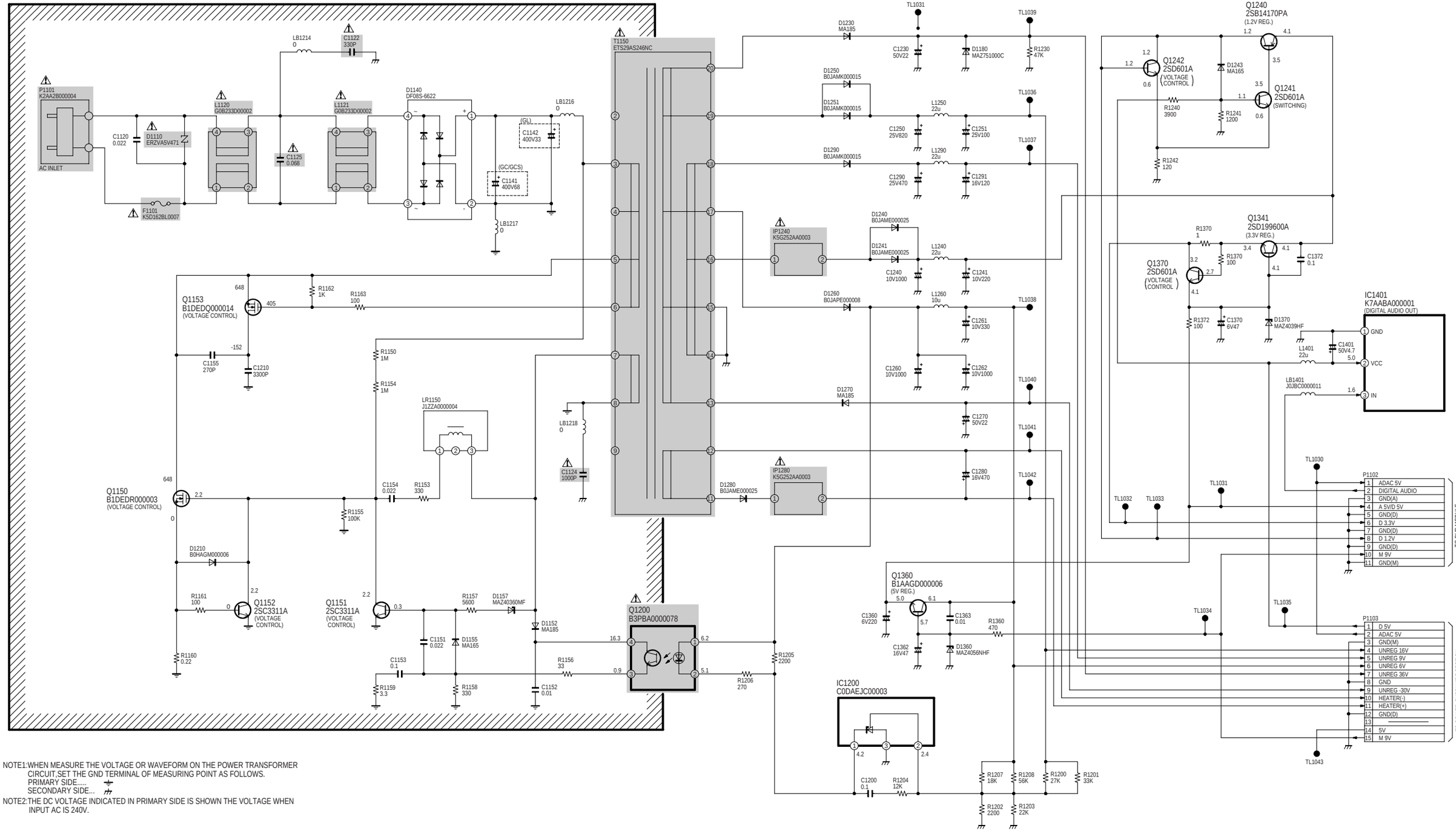
NV-VP32GL/GC/GCS
MOTOR SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.

PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

HOT



NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚

NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS POWER SCHEMATIC DIAGRAM

Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓣ :TO TIMER SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓘ :TO DVD INTERFACE SECTION
Ⓓ :TO DECODER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

TU7601
ENG57820G1:GL
ENG57818G1:GC/GCS

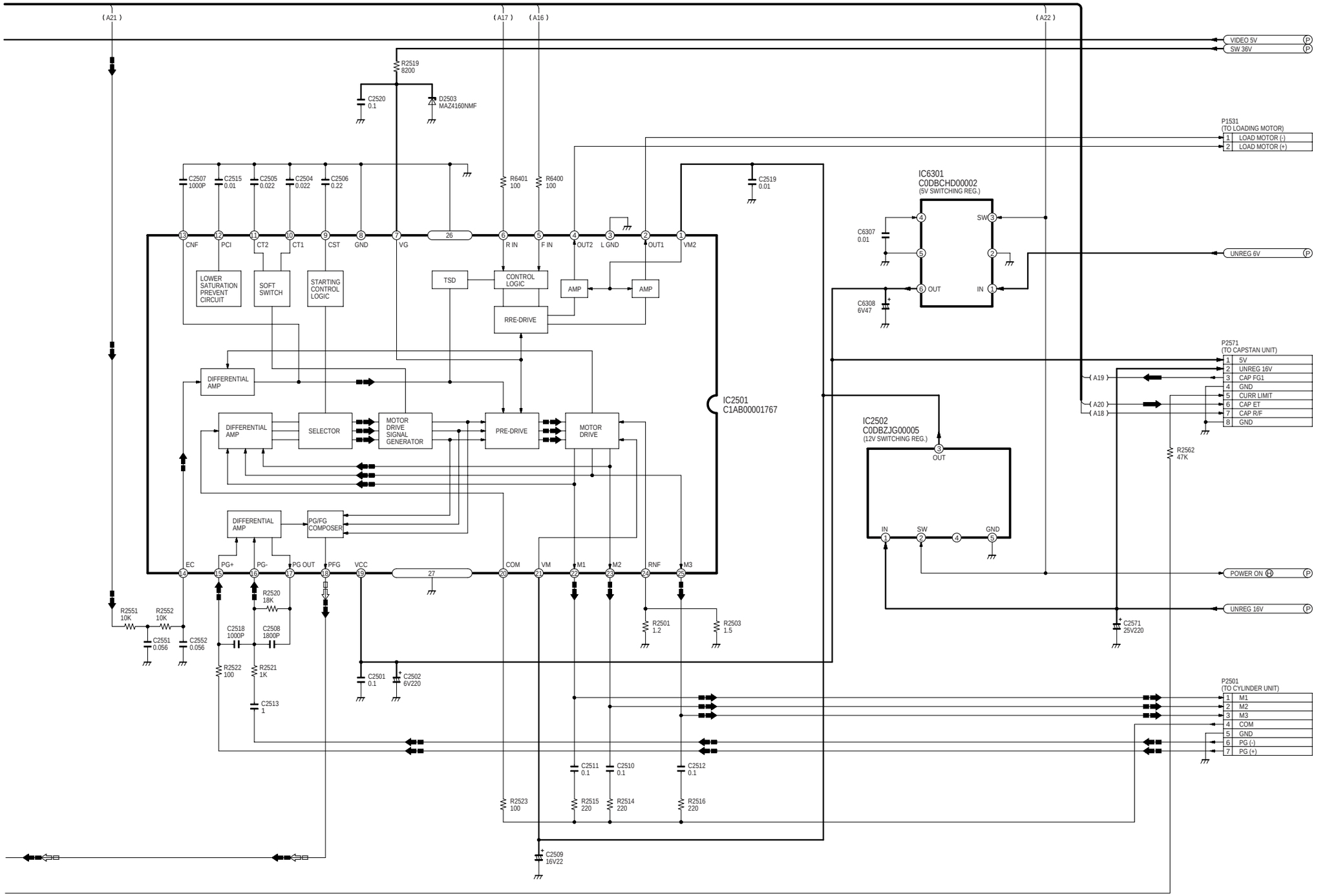
TO POWER P1103(B-11)

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
POWER SUPPLY/RF SECTION
SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓣ :TO TIMER SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓓ :TO DECODER SECTION

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP

IC1511
B3NAA0000049
(T-REEL SENSOR)

IC1512
B3NAA0000049
(S-REEL SENSOR)

IC6201
C0EBH0000172
(RESET)

IC7552
PNA4618M09VT
(IR RECEIVER)

IC6001
C2CBHF000349:GL
C2CBHF000346:GC/GCS

Q1501
PNA2604M01
(T-PHOTO)

Q1502
PNA2604M01
(S-PHOTO)

SENSOR
D1501
B3EA00000072

Q7701
2SB709A
(AMP)

MODE SW
S1532
K0ZZ00000598

SAFETY TAB
S1531
K0C111A00006

NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓘ :TO DVD INTERFACE SECTION

DP37501
A2BB00000136

IC36001
MN101C35DPK

IC36002
C0EBE0000198
(RESET)

X36001
H2D800400009

PS7502
TO FRONT SW
PP7581(A-1)

PP6101
(TO TRAY SW)

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
TIMER SECTION SCHEMATIC DIAGRAM

Ⓟ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓘ :TO DVD INTERFACE SECTION
Ⓓ :TO DECODER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

AV1 IN
VHS/DVD OUT
JK33001
K2HA306B0001
AUDIO IN(R)
AUDIO OUT(R)
AUDIO IN(L)
AUDIO OUT(L)
VIDEO IN
VIDEO OUT

Ⓢ IIC CLOCK
Ⓢ IIC DATA
Ⓢ FM MUTE (H)
Ⓢ HEAD SW
Ⓢ MESECAM (H)
Ⓢ TRACKING ENV.
Ⓘ DVD VIDEO OUT
Ⓢ VIDEO OUT
Ⓢ DVD OUT (H)

Ⓟ RFC VIDEO OUT
Ⓐ AUDIO IN(R)
Ⓐ AUDIO OUT(R)
Ⓐ AUDIO IN(L)
Ⓐ AUDIO OUT(L)

TL4406 TL4404 TL4405 TL4403 TL3712 TL3711
LB4406 0 LB4404 0 LB4405 0 LB4403 0
R4406 0 R4404 470 R4405 0 R4403 470
R3711 75
C3715 6V470
R3712 75

C3713 1
C3714 1
R3703 1M
IC3701
C1AB00001935
R36033 0
C3712 0.1
C3711 6V100

L5001 68u
C5006 0.1
C5005 6V100

(GC/GCS)
C3047 0.1
(GL)
R3038 2200
C3046 1
(GC/GCS)

R3018 15K
R4002 10K
TW3001
C3042 50V4.7
B-Y INVERT
COME
CR DET
MESECAM DET
TANK
COLOR LEVEL DETECTOR
DET
DET
ENVDET
HPF

C5001 0.01
C5002 0.01
C5003 0.01
C5004 0.01
SP2
SP1
VCA
CH2
CH1
REC MUTE
EXT
INT
SP

P4002
(TO A/C HEAD)
AUDIO ERASE IN 1
GND 2
AUDIO HEAD(R) 3
AUDIO HEAD(W) 4
CTL HEAD(-) 5
CTL HEAD(+) 6
Ⓢ CTL HEAD (+)
Ⓢ CTL HEAD (-)

R4081 10K
C4082 470P
T4081
G2A352C00002
C4081 0.022
R4082 3300
Q4081
2SD602A
(OSC)
C4084 1800P
C4085 0.022

P4001
(TO FULL ERASE HEAD)
FULL ERASE IN 1
FULL ERASE OUT 2
Ⓟ UNREG 6V
Ⓟ GND

R4086 2200
Q4084
2SB710A
(ERASE HEAD DRIVE)
R4087 2200
QR4082
UN2213
(BIAS (H) :ON)
L4081 470u
C4083 6V47

P5001
(TO CYLINDER UNIT)
LP/EP R 1
LP/EP COM 2
LP/EP L 3
SP R 4
SP COM 5
SP L 6
AUDIO HEAD L 7
AUDIO HEAD COM 8
AUDIO HEAD R 9
Ⓐ AUDIO HEAD R
Ⓐ AUDIO HEAD COM
Ⓐ AUDIO HEAD L

C4066 2200P
QR4061
UN2211
(PAL 9H (H) :ON)

Ⓢ BIAS (H)
Ⓢ PAL 9H (H)
Ⓢ D.REC (H)
Ⓟ Ⓓ TUNER AUDIO(N)
Ⓐ AUDIO IN(N)
Ⓐ AUDIO OUT(N)

QR4081
UN2111
(D.REC (H) :OFF)
R4084 1K
Q4082
2SD1149
(PB:ON)
R4085 1K
Q4083
2SD601A
(PB:ON)

Ⓟ AUDIO 5V
Ⓟ VIDEO 5V

R4061 470K
C4061 6800P
R4062 15K
R4063 330
C4062 6V22
C4063 50V3.3
R4071 15K
C4065 1800P
R4015 20K
C4042 50V4.7

C4041 50V4.7
C4064 1800P
C4018 6V22

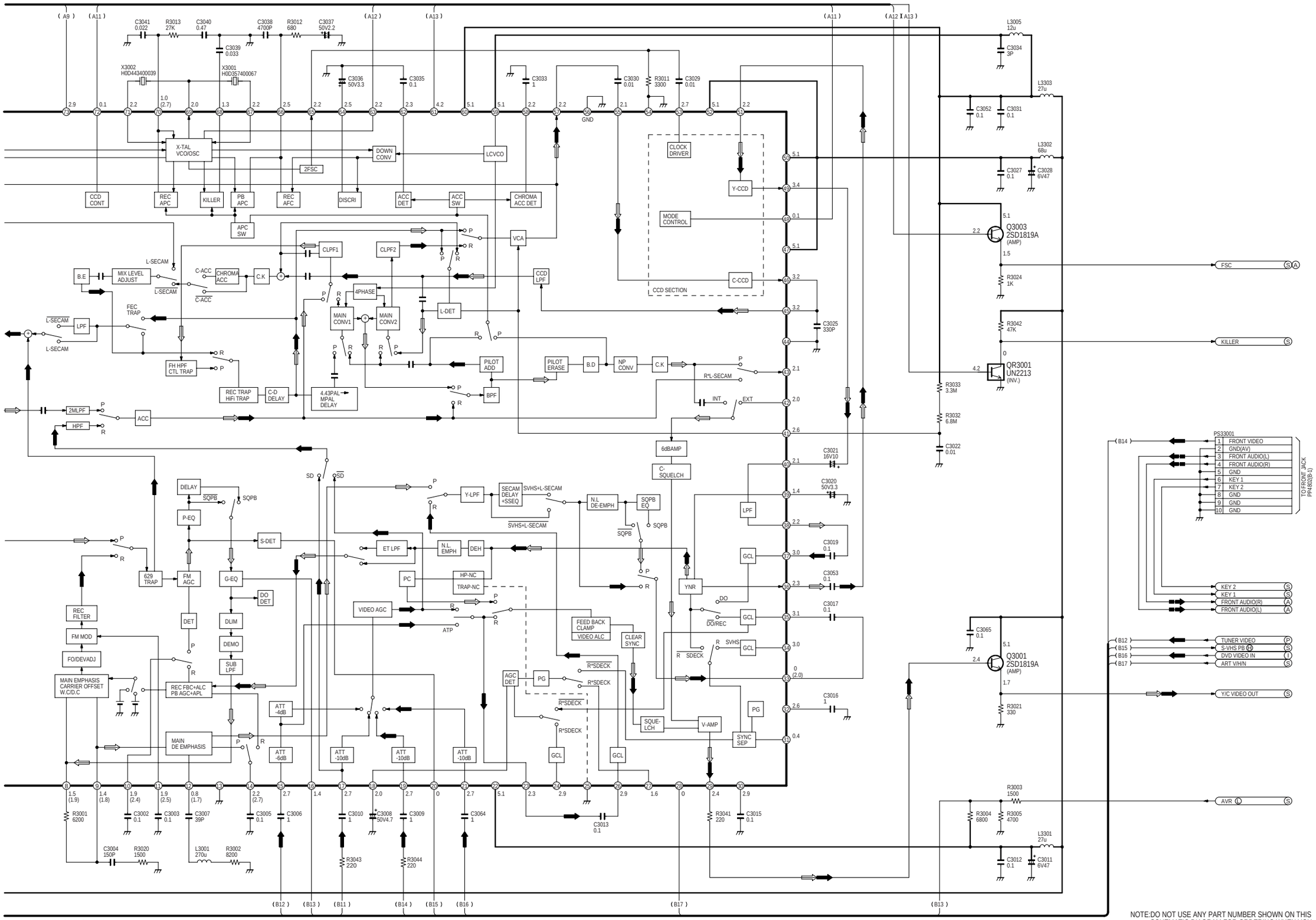
SP ON
FH TRAP
PREAMP
REC ON
EP ON
REC EQ
R
P
VCA
DET
BAND GAP

IC3001
C1AB00001836
C4010 16V10
C3062 16V10
R4017 56K
R4016 47K
R4011 4700
R4012 15K

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

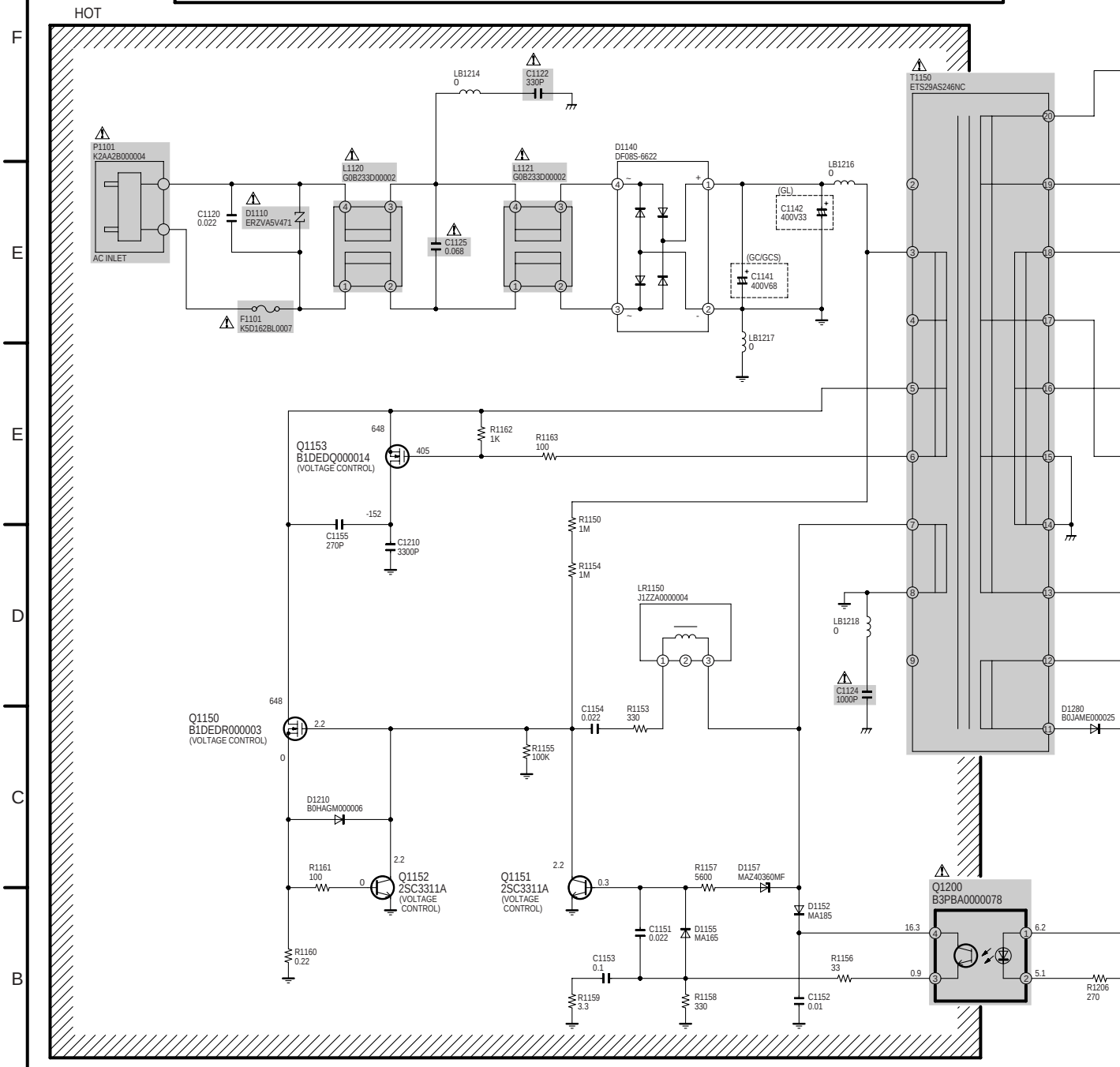
16 SCHEMATIC DIAGRAMS

16.1. POWER SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.

PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

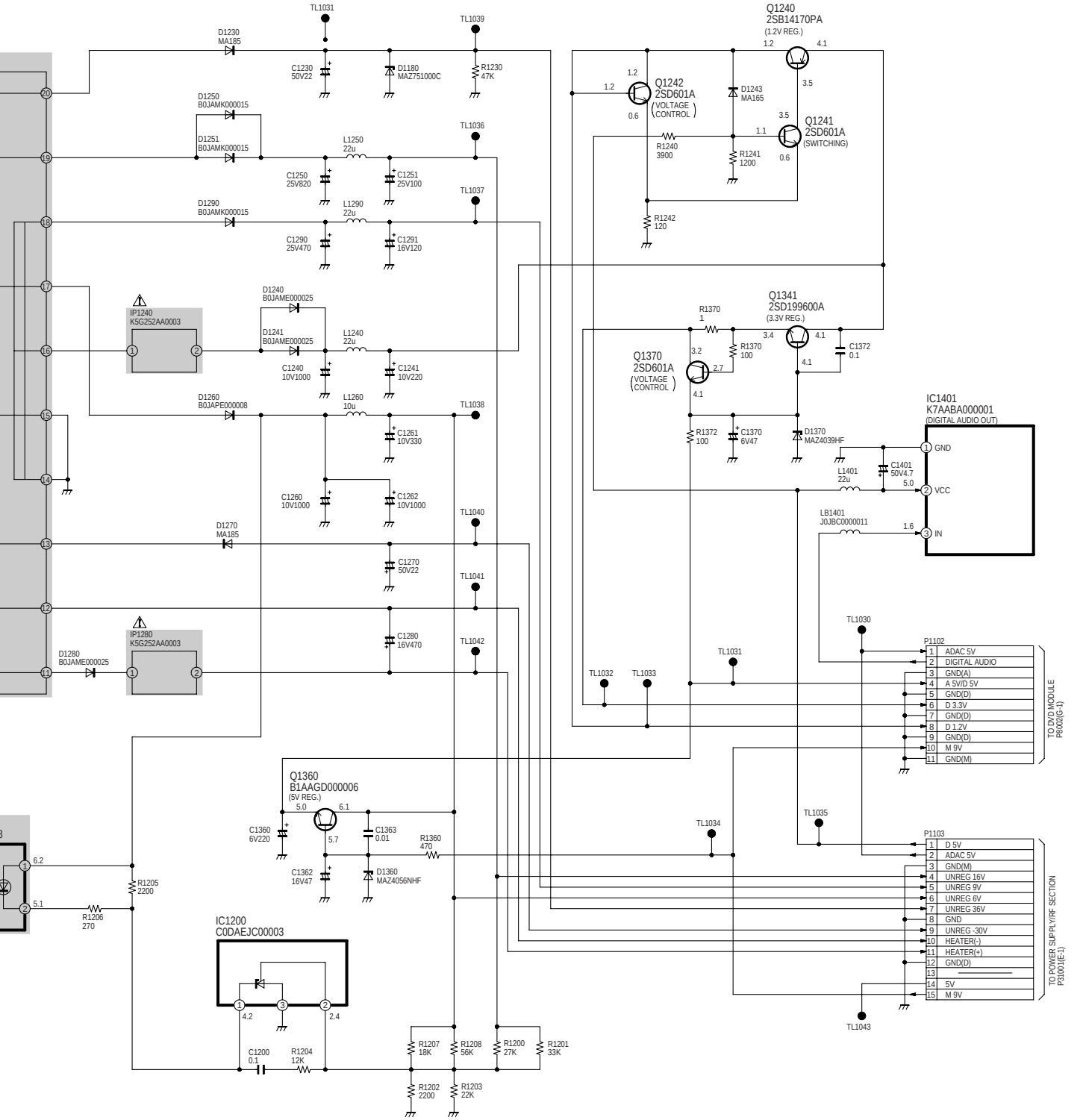


NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚

NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFER
WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING
TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRO



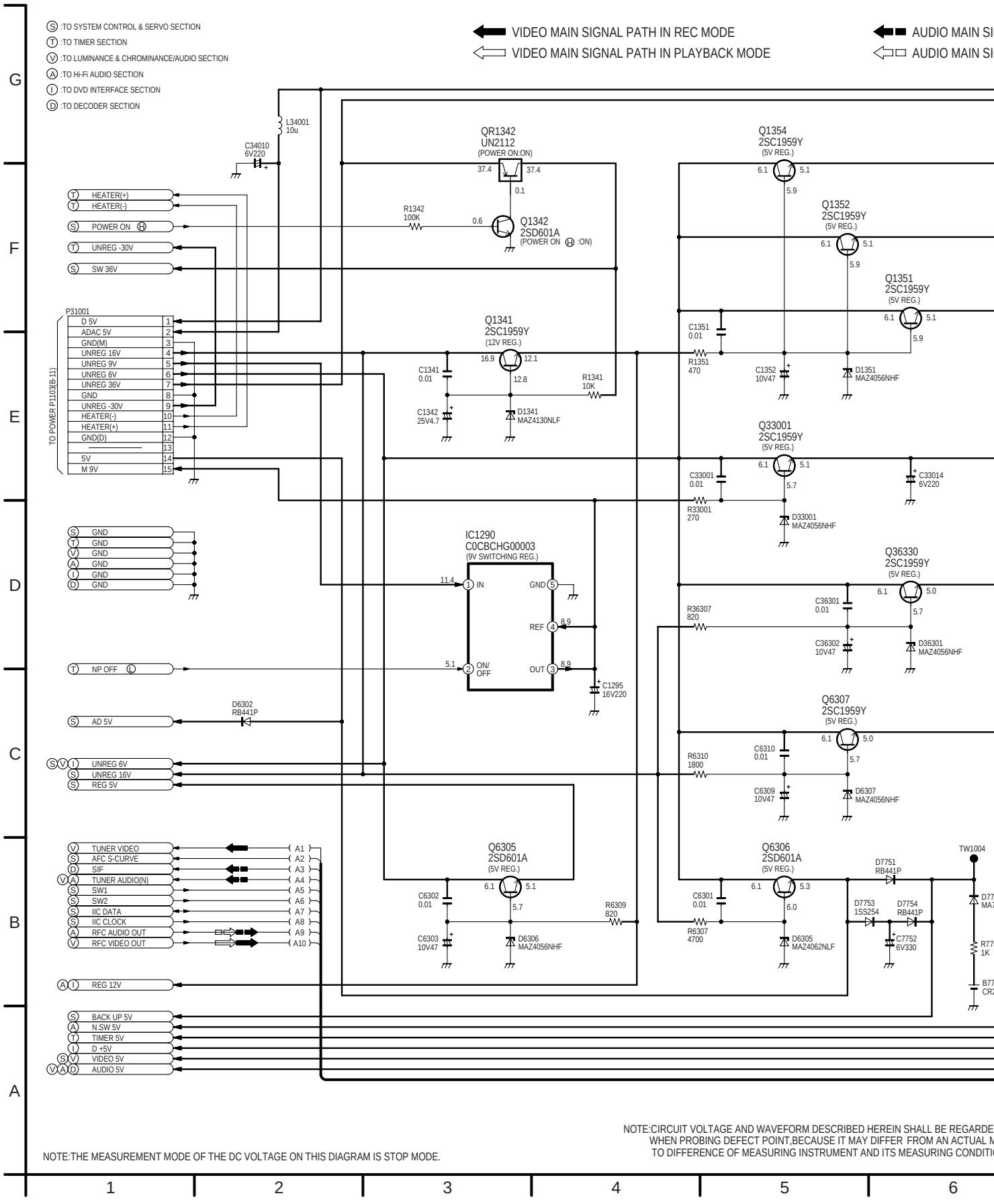
BE REGARDED AS REFERENCE INFORMATION
AN ACTUAL MEASURING VALUE DUE
RING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
POWER SCHEMATIC DIAGRAM

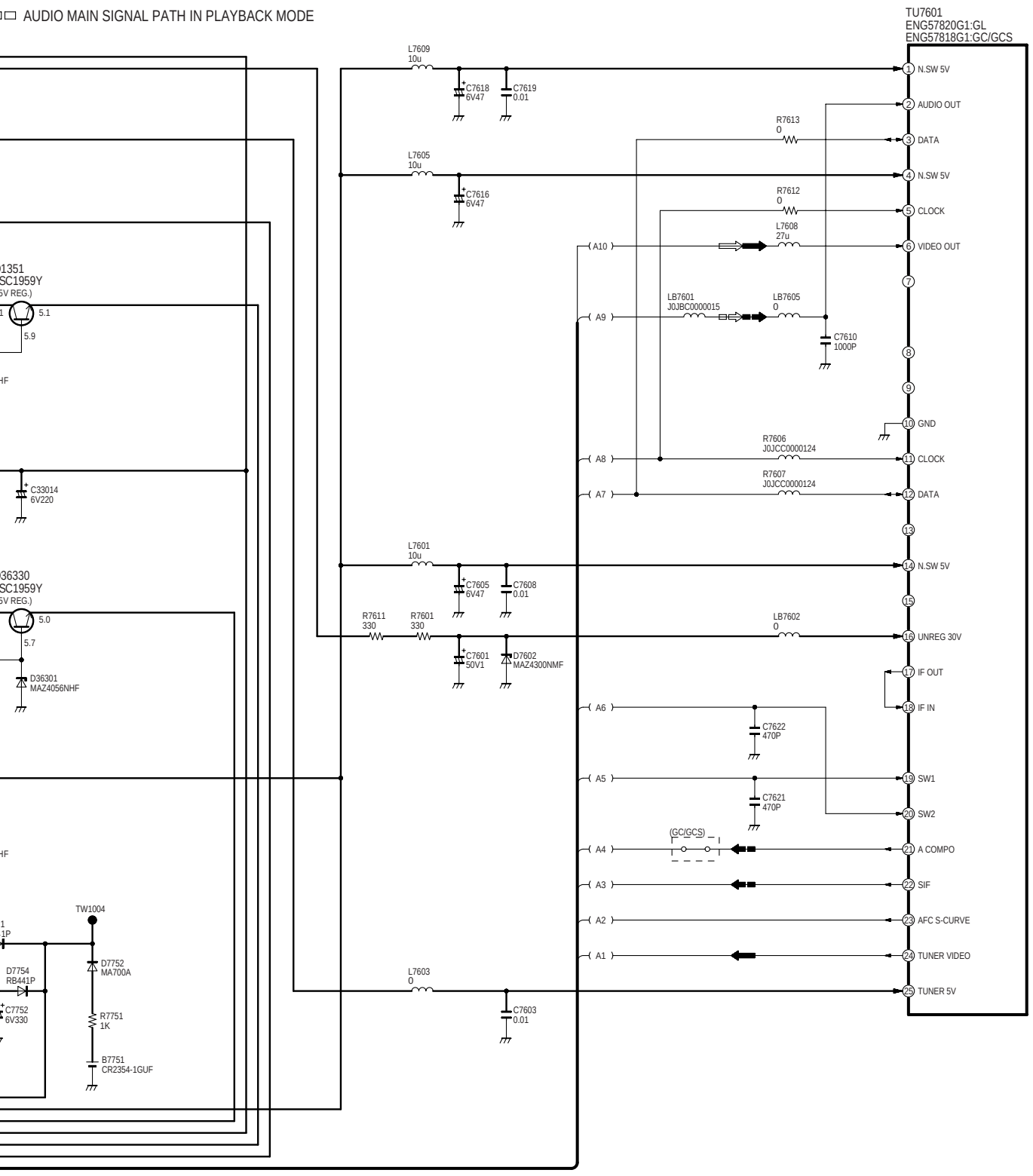
6 | 7 | 8 | 9 | 10 | 11 | 12

16.2. POWER SUPPLY/RF SECTION IN MAIN SCHEMATIC DIAGRAM



AUDIO MAIN SIGNAL PATH IN REC MODE

AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



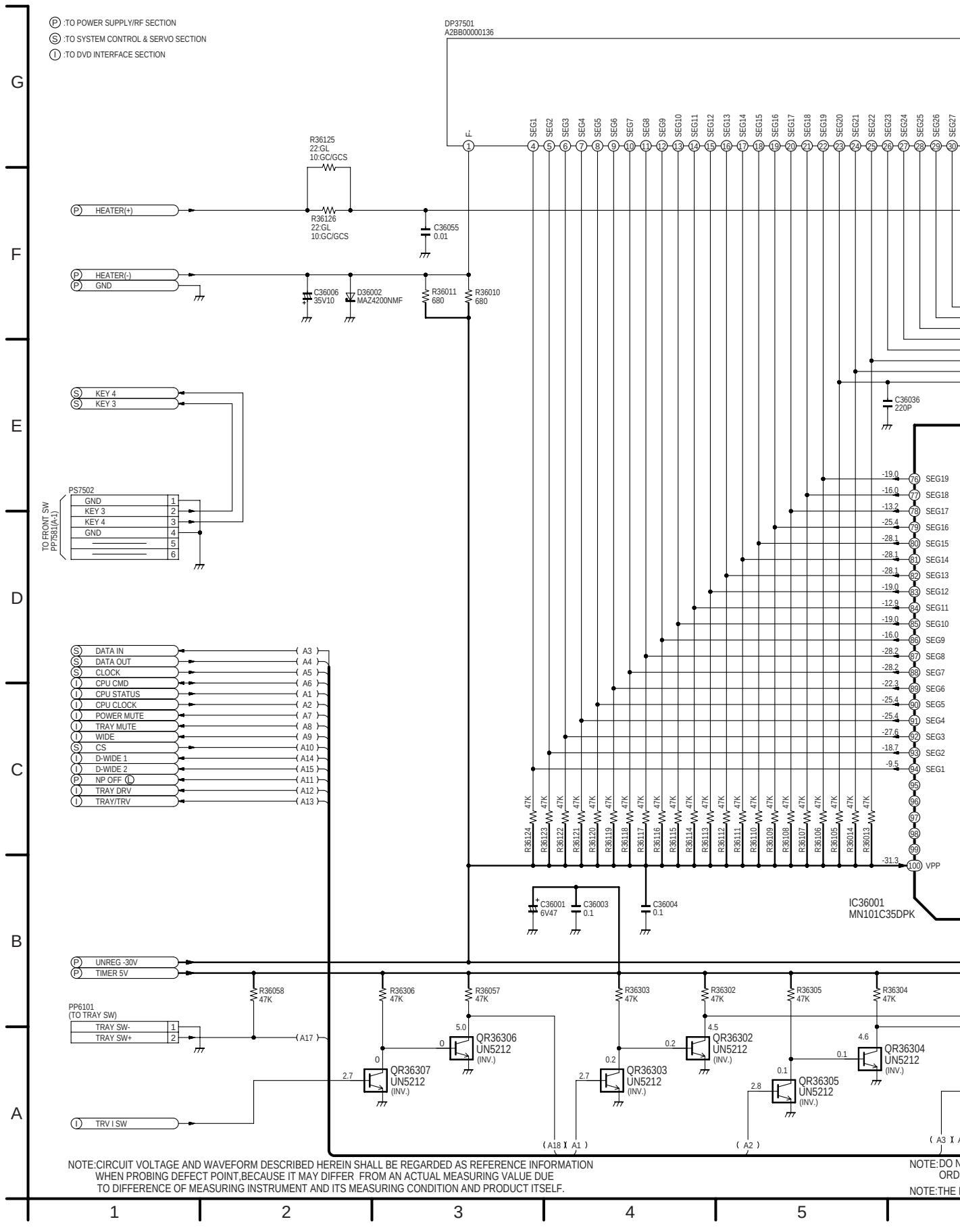
IN SHALL BE REGARDED AS REFERENCE INFORMATION
ER FROM AN ACTUAL MEASURING VALUE DUE
S MEASURING CONDITION AND PRODUCT ITSELF.

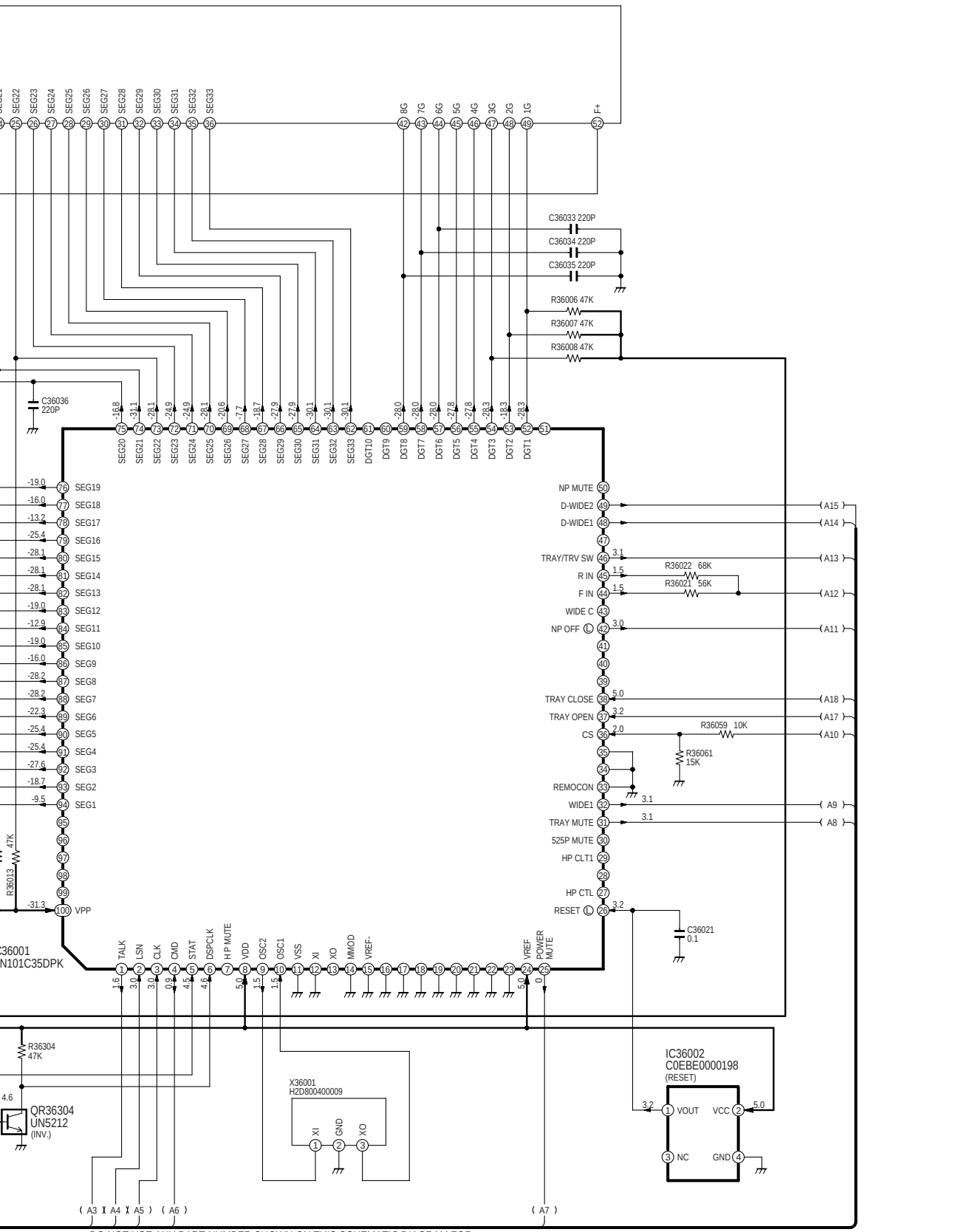
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
POWER SUPPLY/RF SECTION
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

16.3. TIMER SECTION IN MAIN SCHEMATIC DIAGRAM





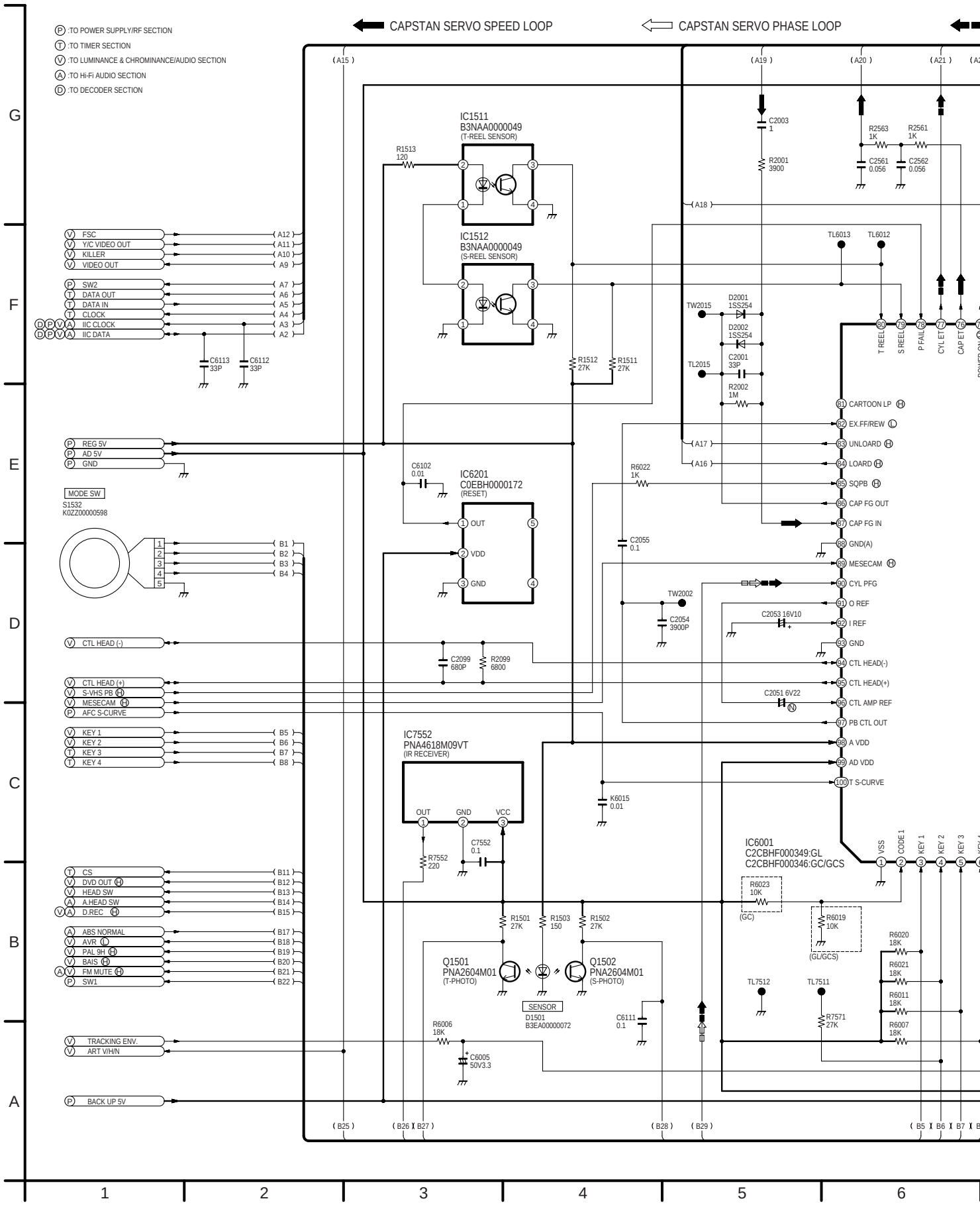
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

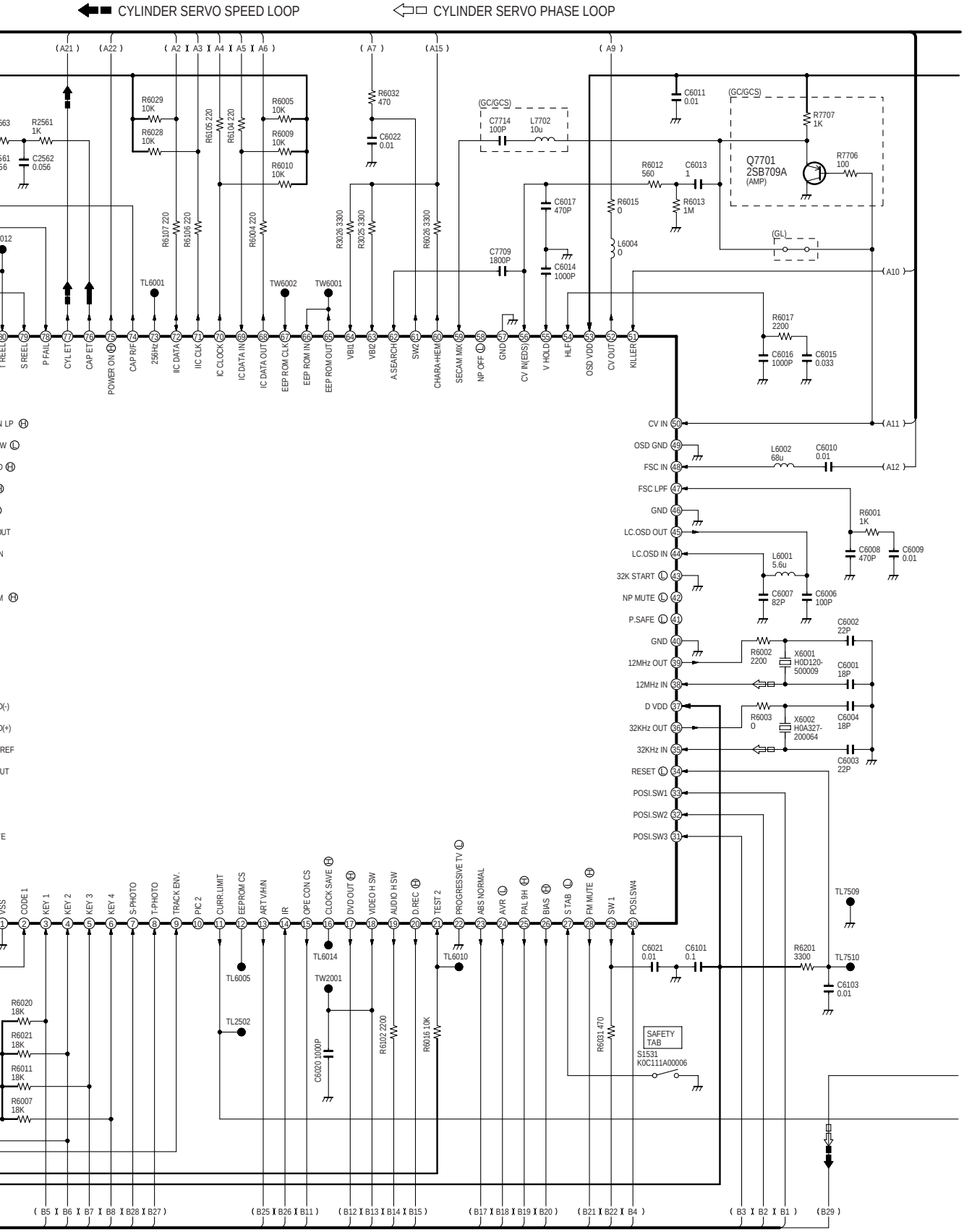
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-VP32GL/GC/GCS
TIMER SECTION SCHEMATIC DIAGRAM

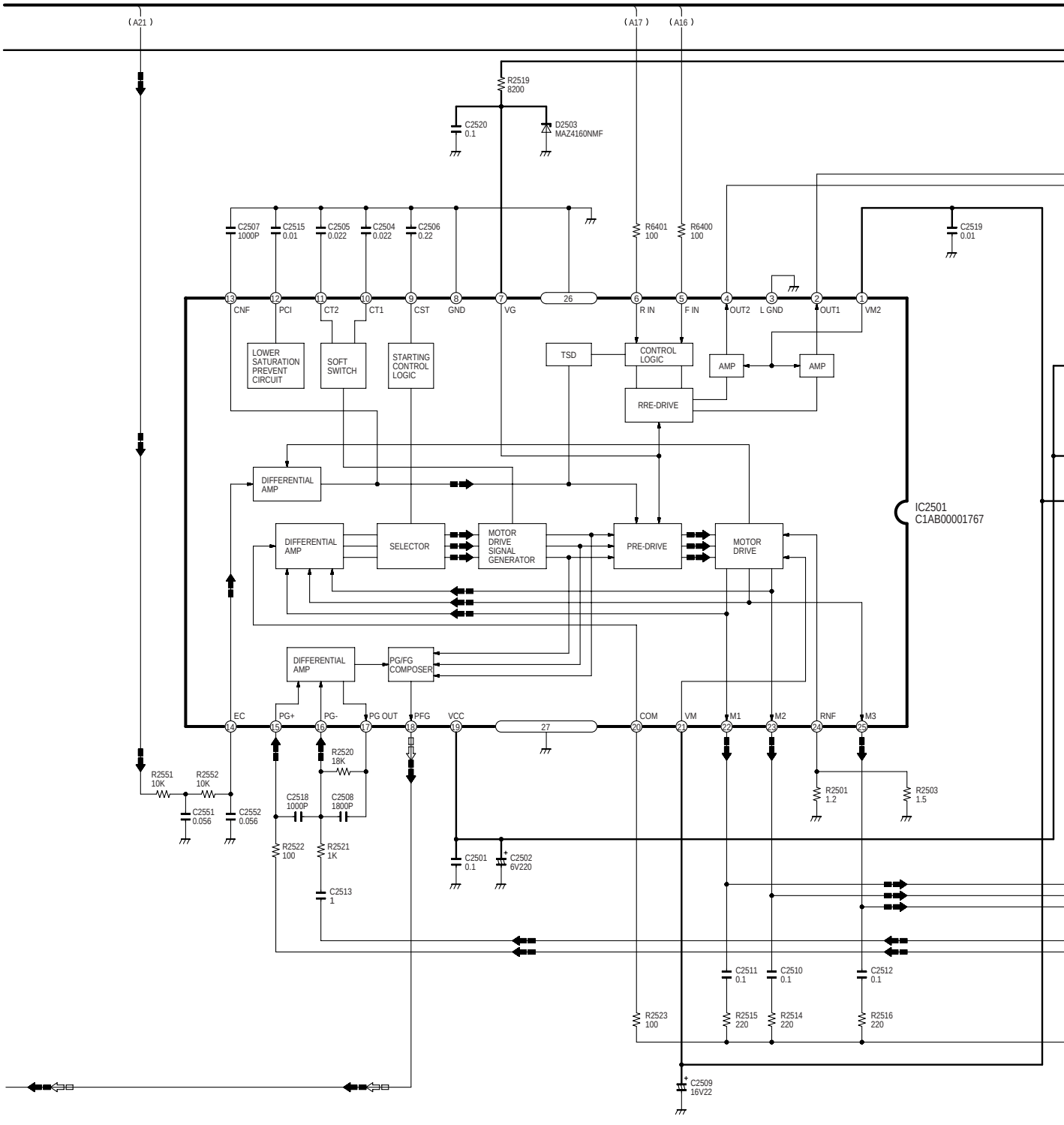
6 | 7 | 8 | 9

16.4. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM





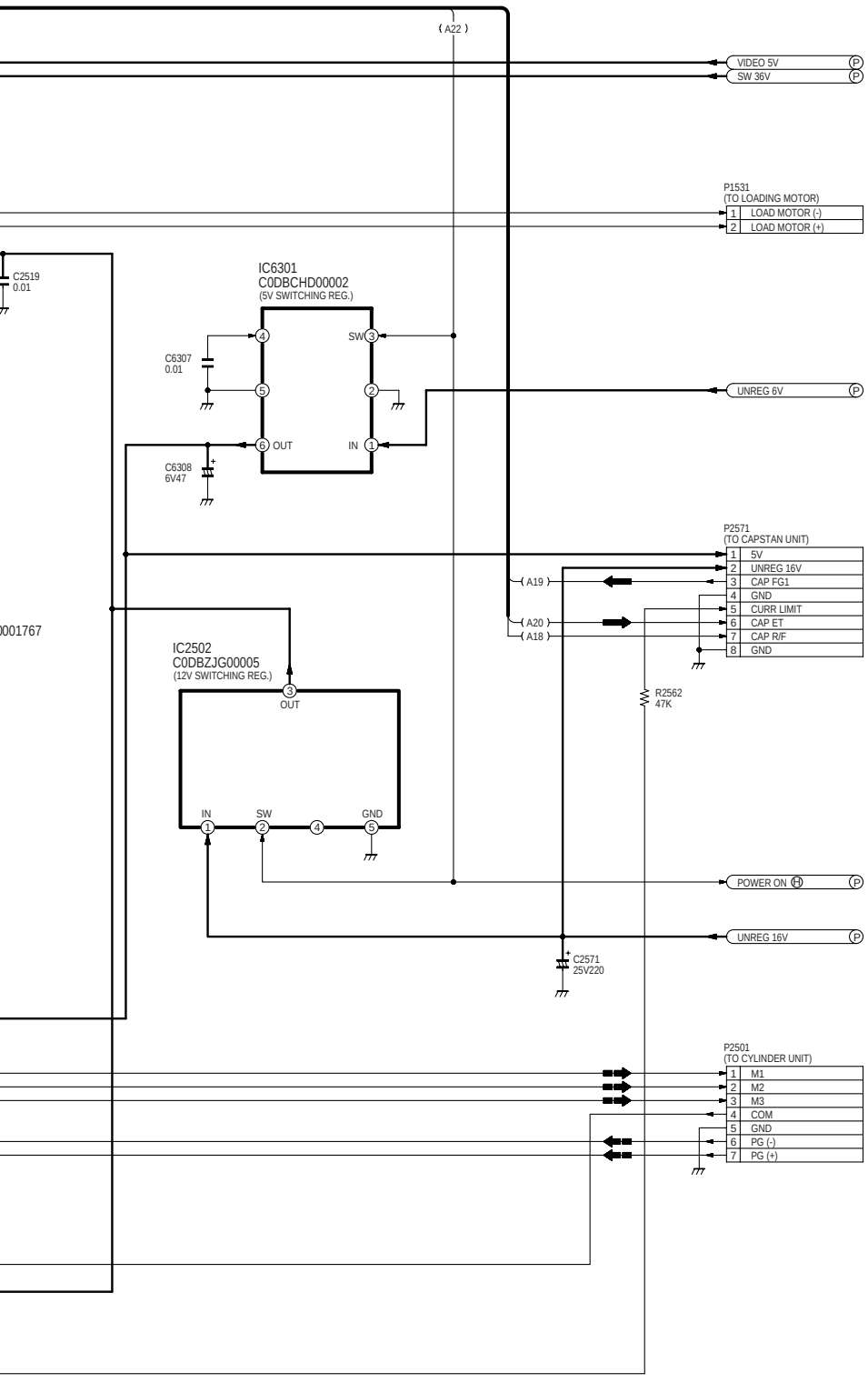
NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO SECTION SCHEMATIC DIAGRAM

NOTE:D
ORD

12 | 13 | 14 | 15 | 16 | 17

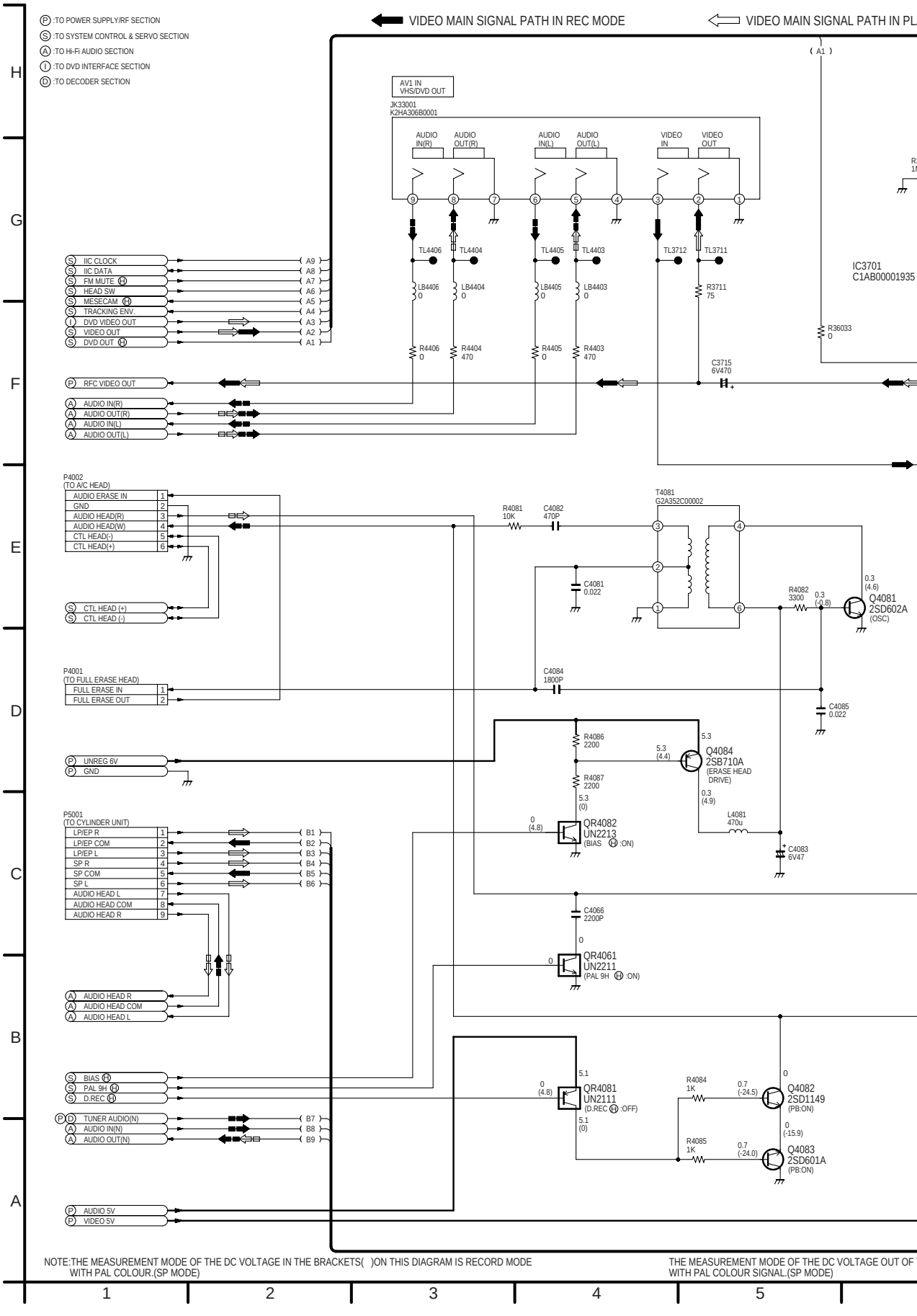


NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

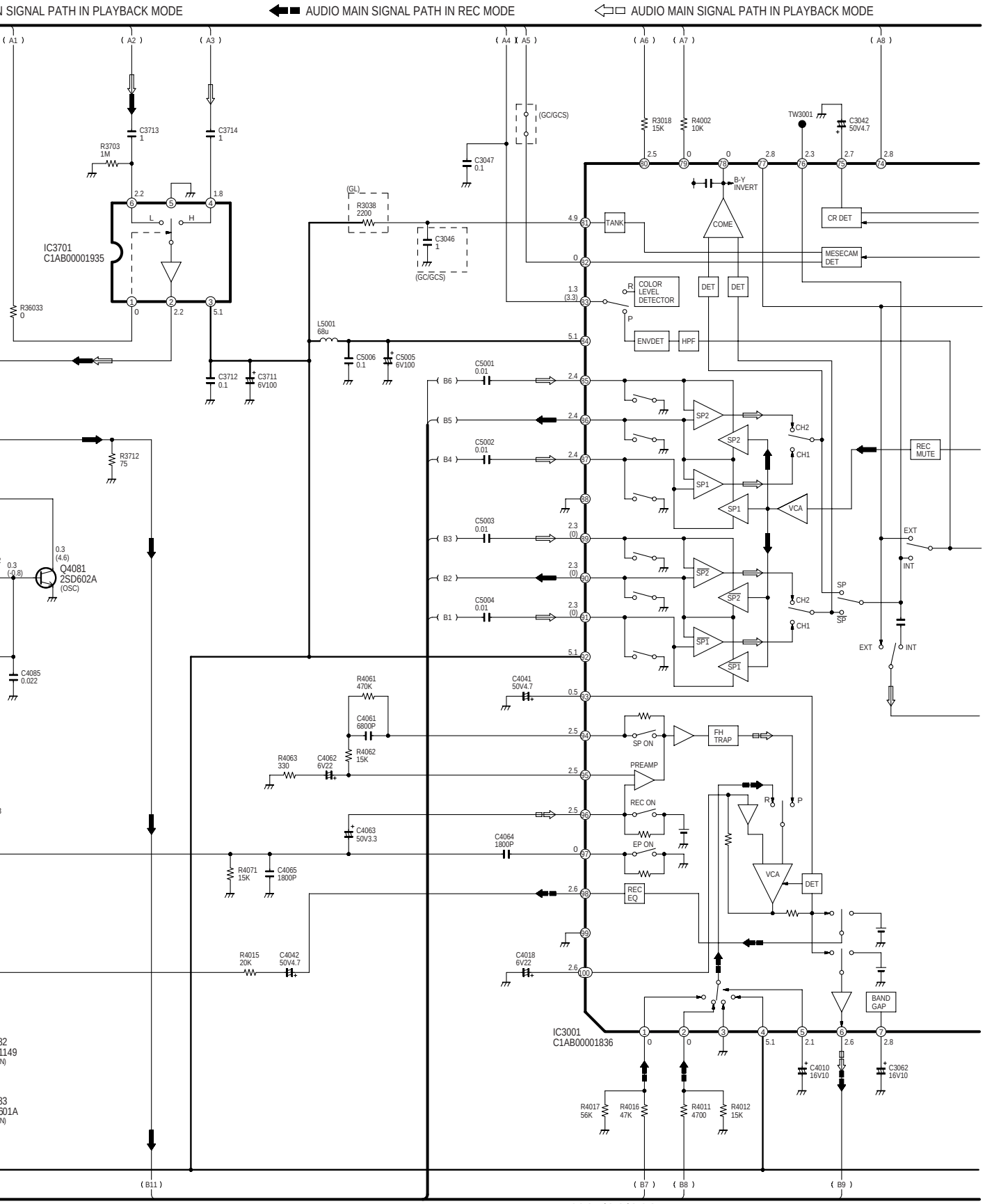
17 | 18 | 19 | 20

NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO
SECTION SCHEMATIC DIAGRAM

16.5. LUMINANCE & CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRA



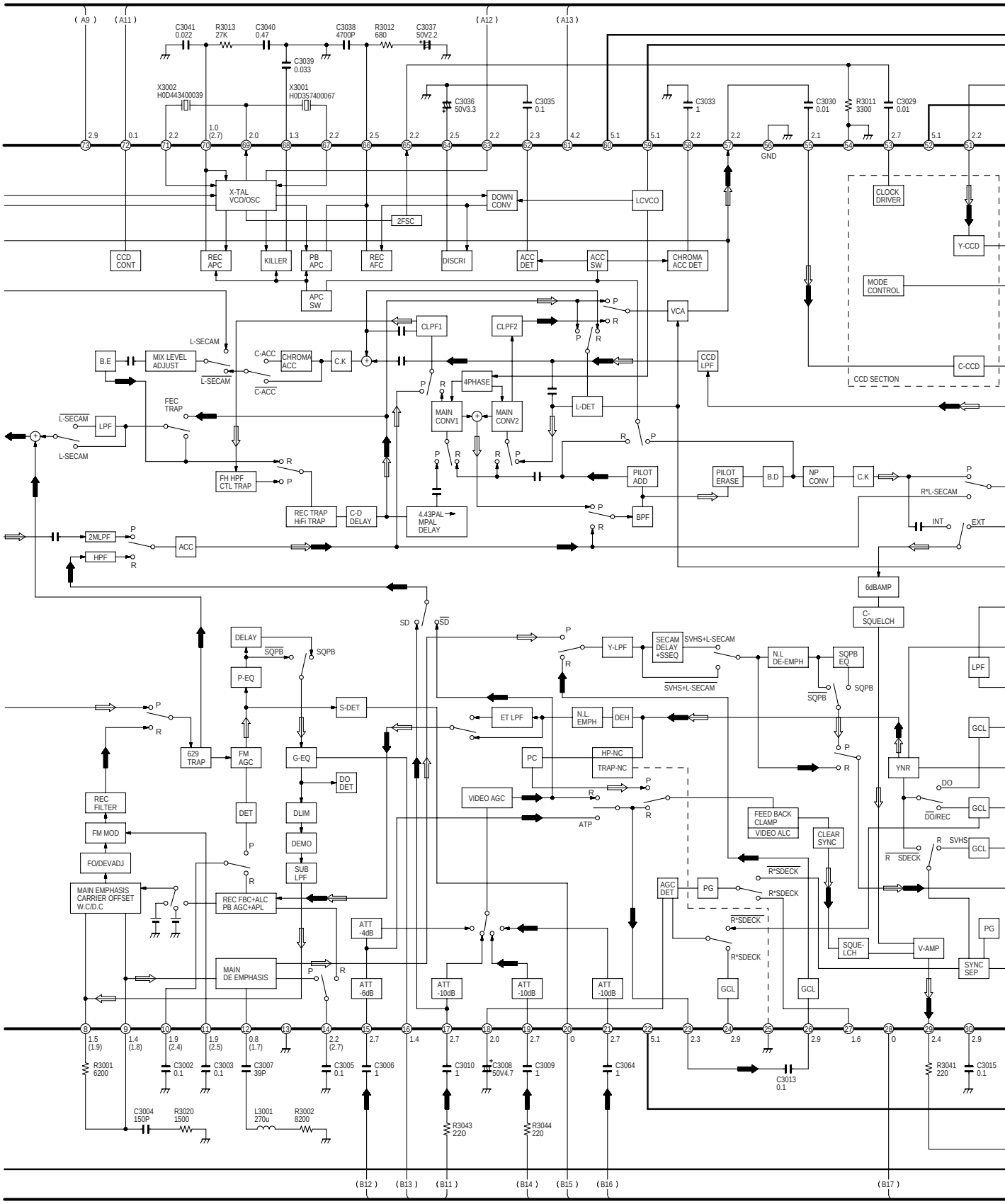
DIAGRAM



THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE
MODE)

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

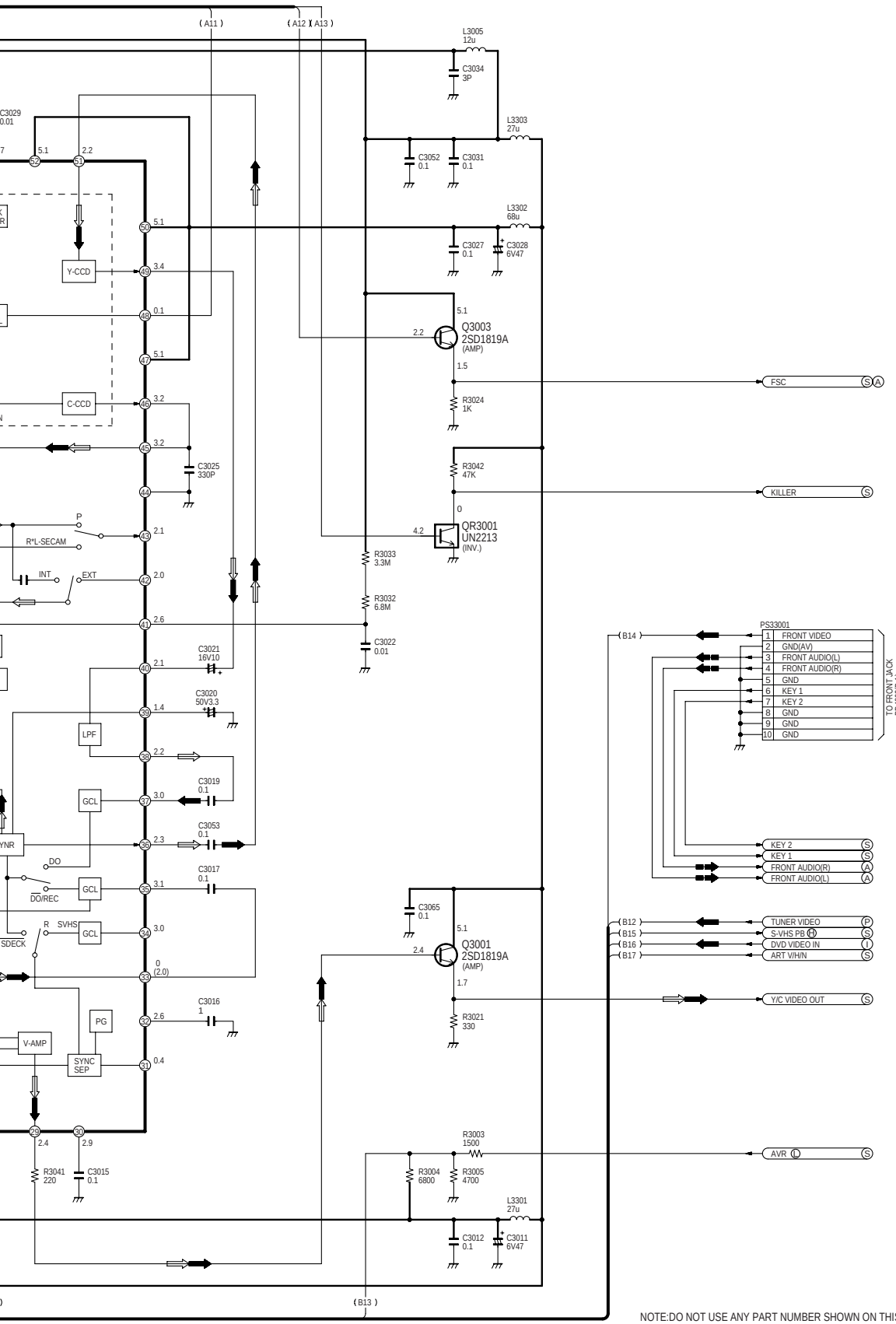
6 7 8 9 10 11



NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/AUDIO SECTION SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS RE
MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASUR

12 13 14 15 16 17 18



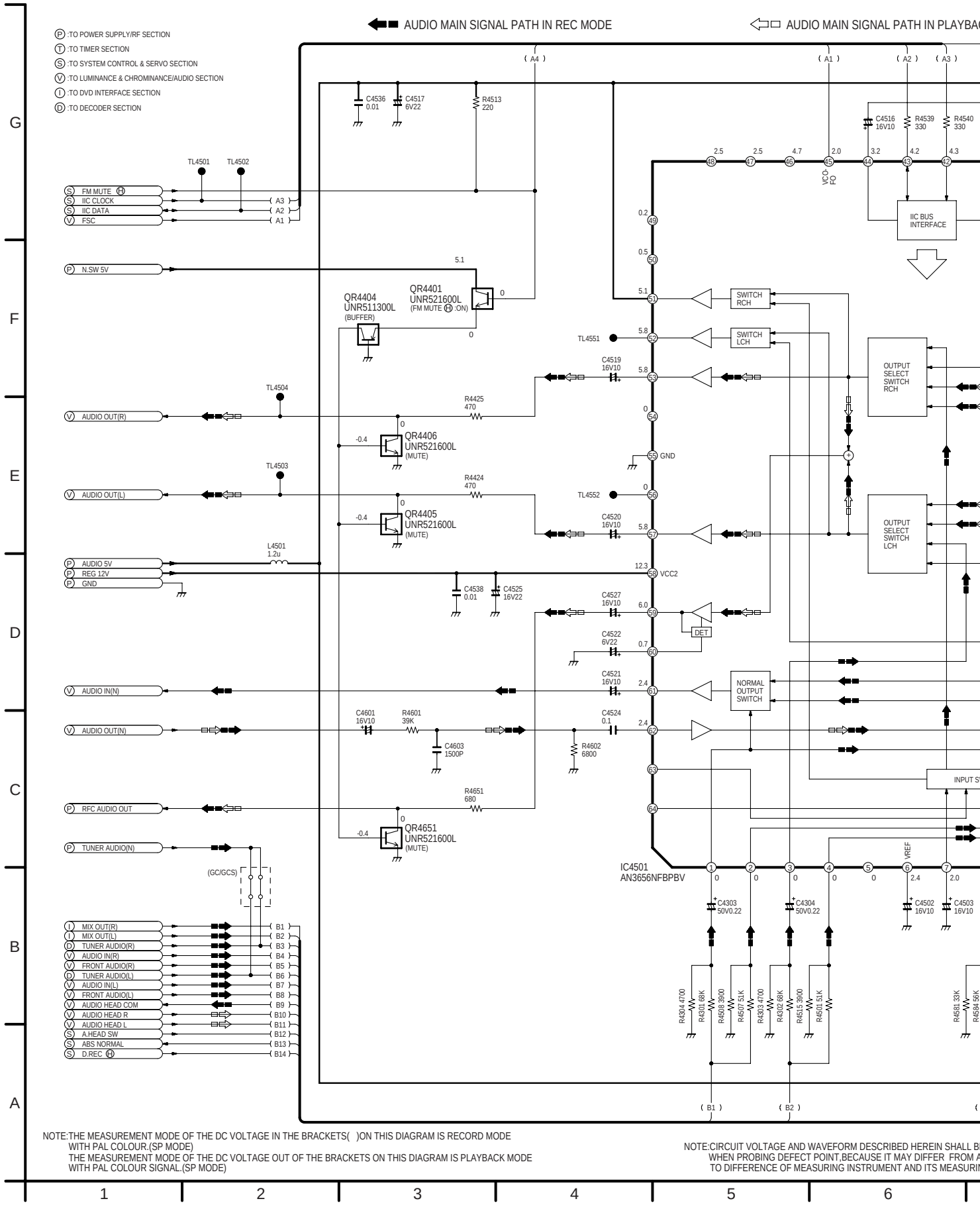
ALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT
DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

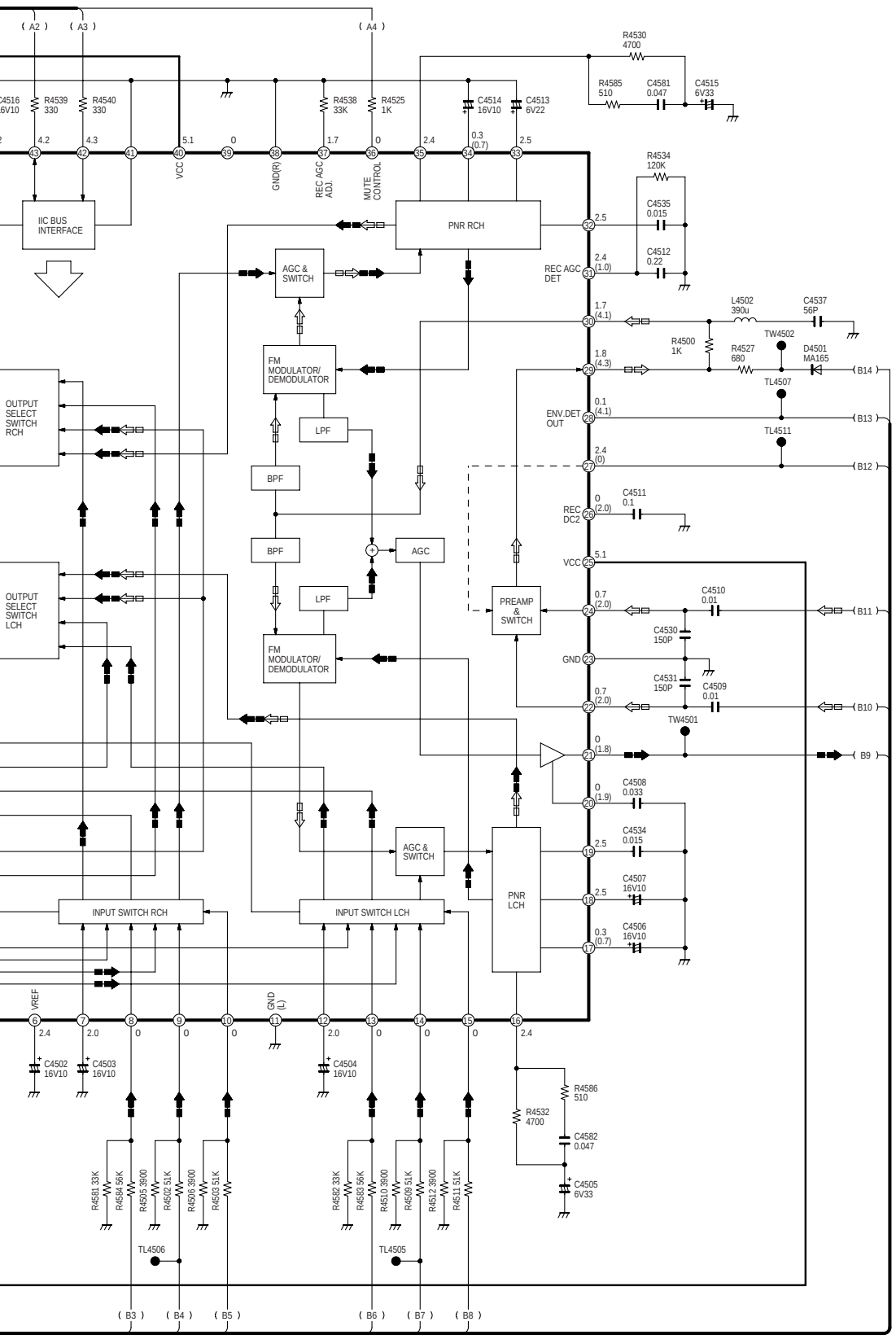
NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE/
AUDIO SECTION
SCHEMATIC DIAGRAM

18 19 20 21 22 23

16.6. Hi-Fi AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM



AL PATH IN PLAYBACK MODE



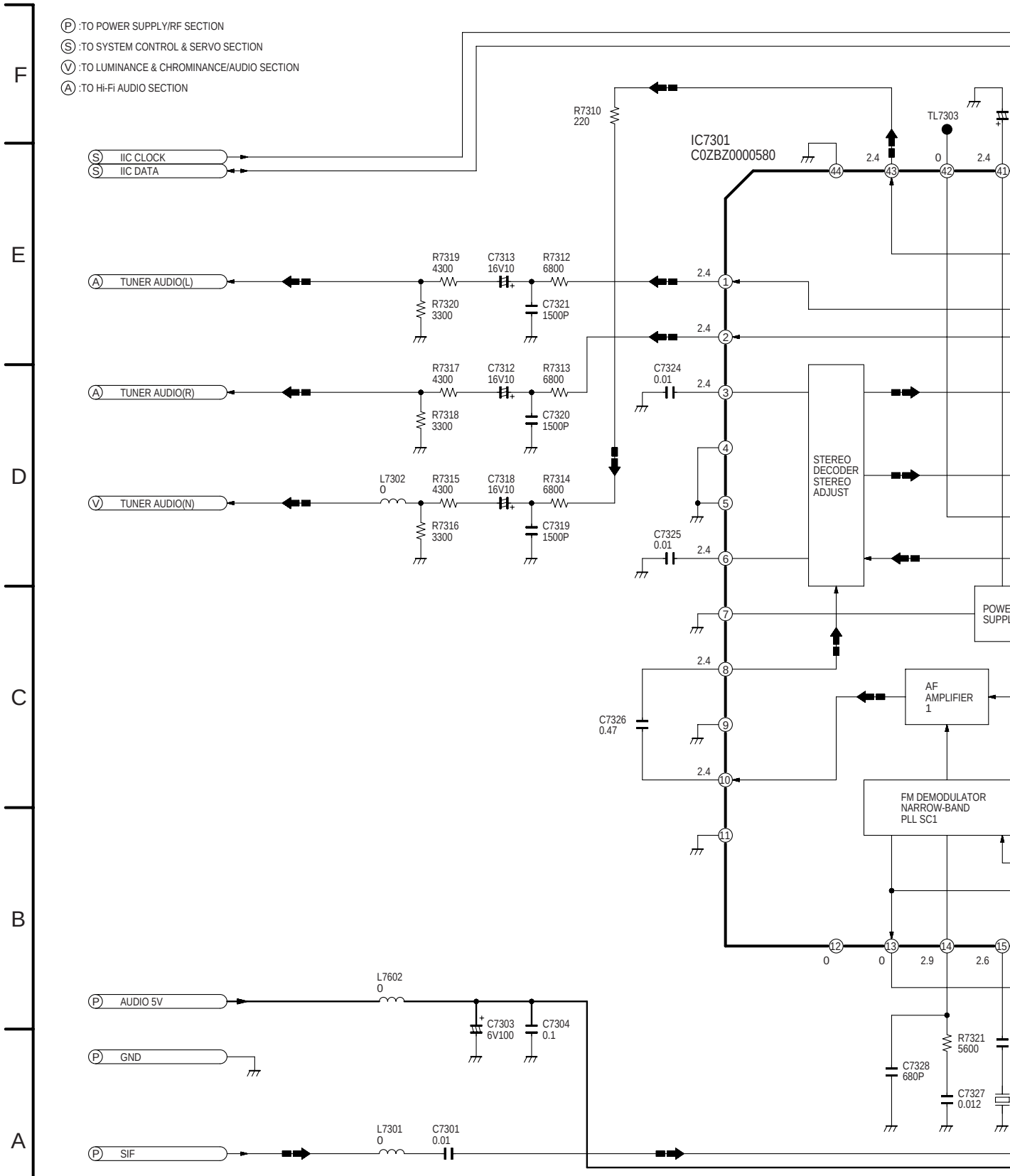
CRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION
E IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE
MENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
Hi-Fi AUDIO SECTION
SCHEMATIC DIAGRAM

6	7	8	9	10	11

16.7. DECORDER SECTION IN MAIN SCHEMATIC DIAGRAM (NV-VP32GL)



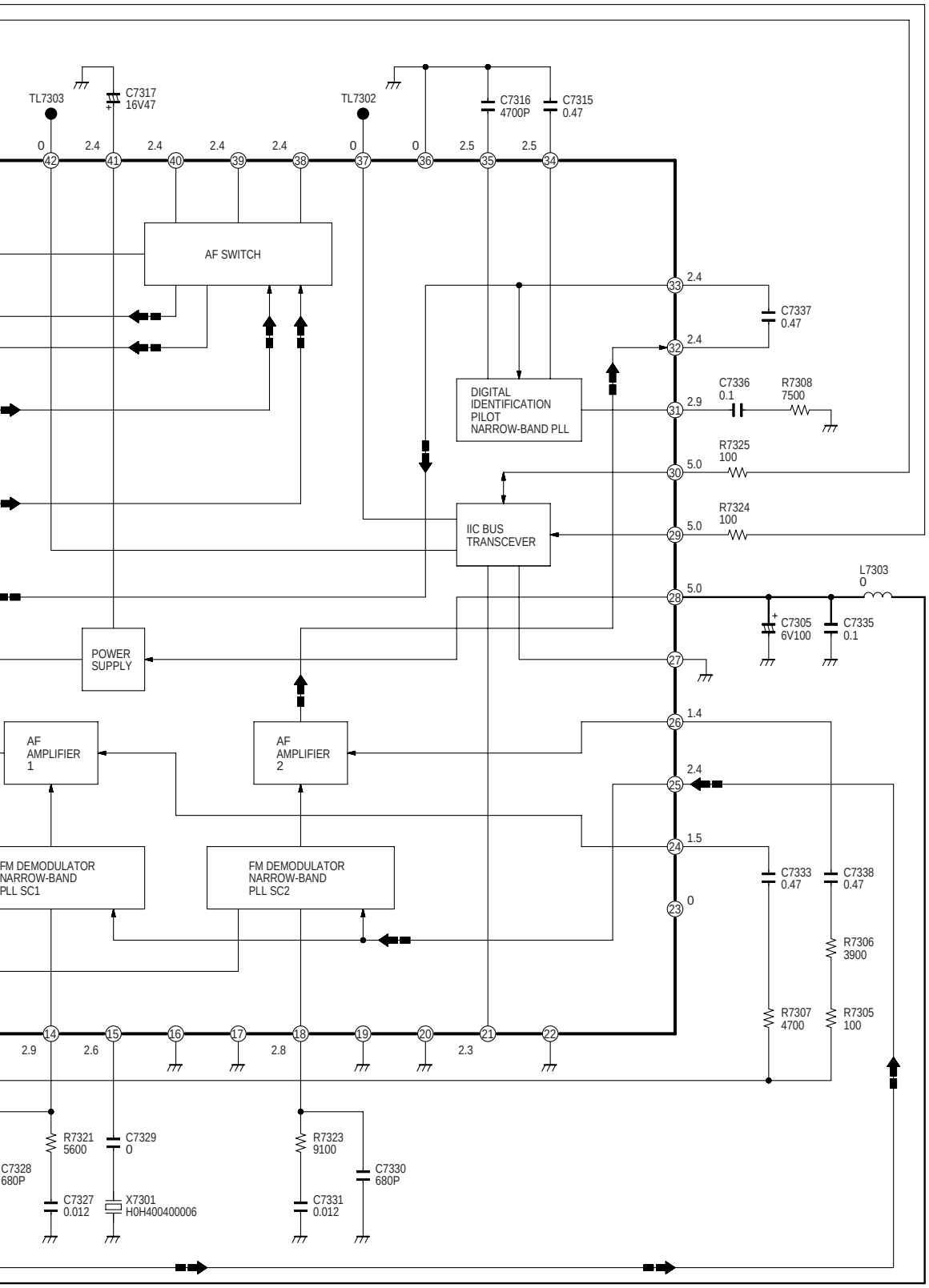
NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

-)

AUDIO SIGNAL PATH



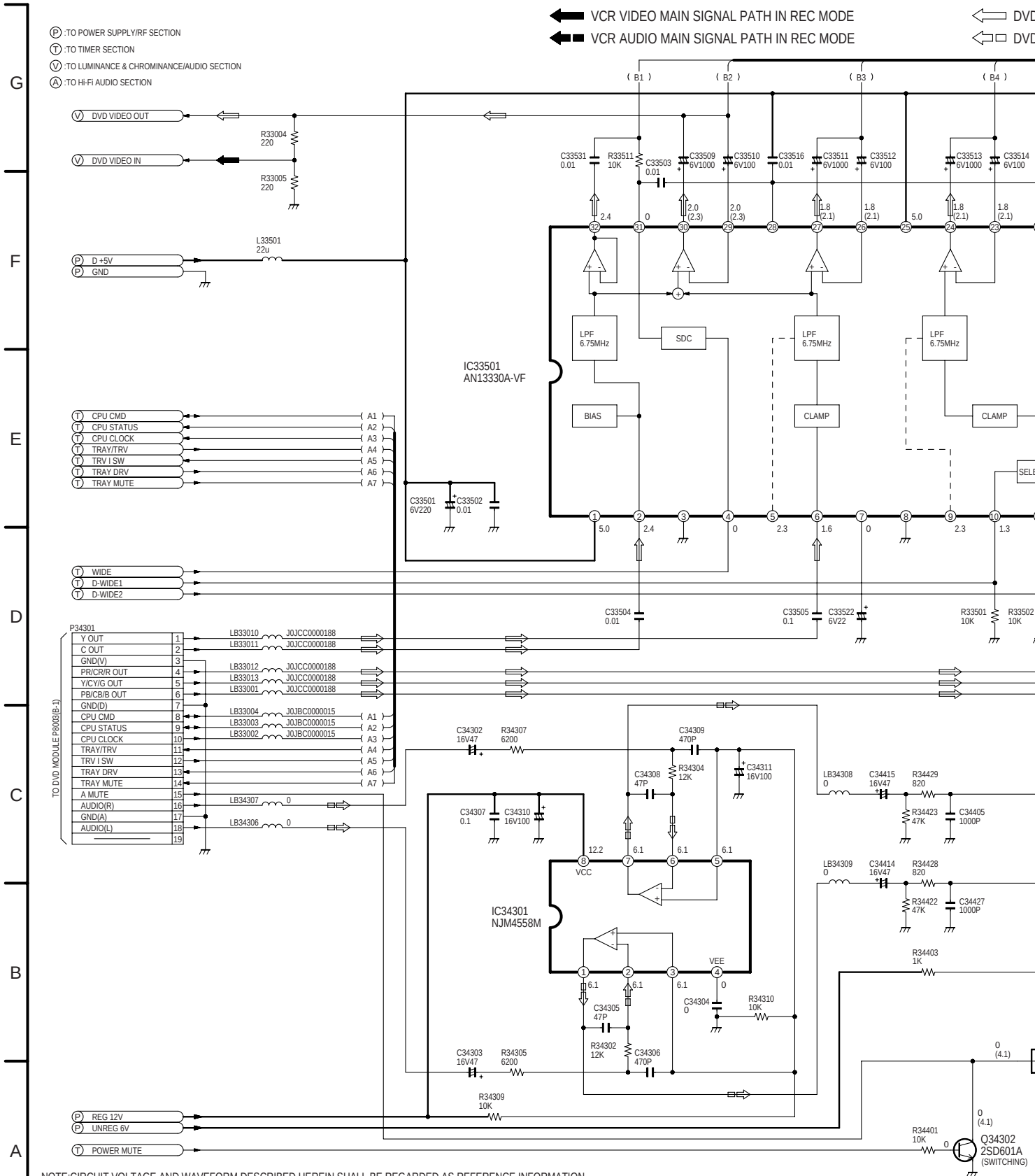
T,BECAUSE IT MAY DIFFER
'SELF.

TS LIST.

NV-VP32GL
DECODER SECTION SCHEMATIC DIAGRAM

5 6 7 8

16.8. DVD INTERFACE SECTION IN MAIN SCHEMATIC DIAGRAM



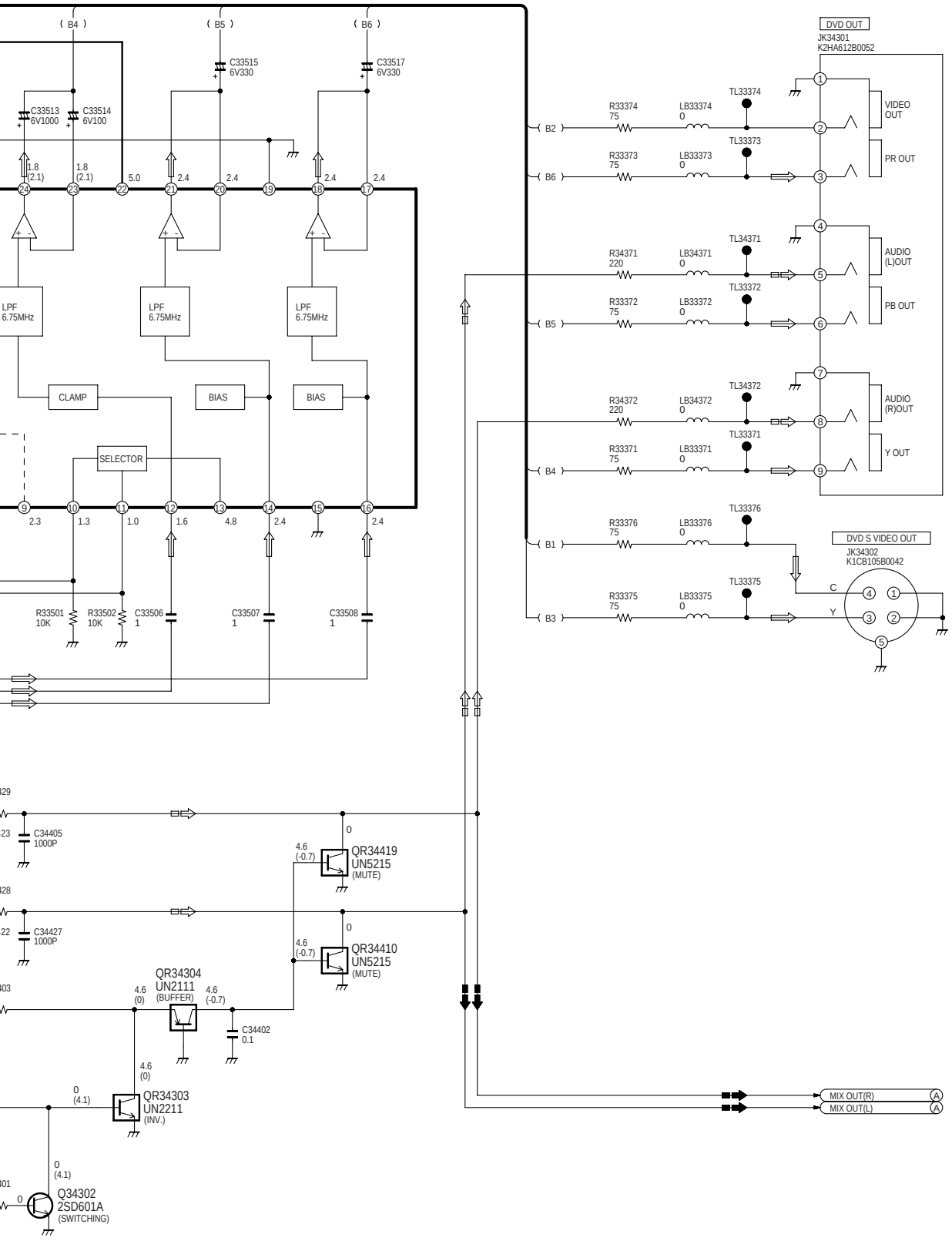
NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAG
THE MEASUREMENT MODE OF THE DC VOLTAG

DVD VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

DVD AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

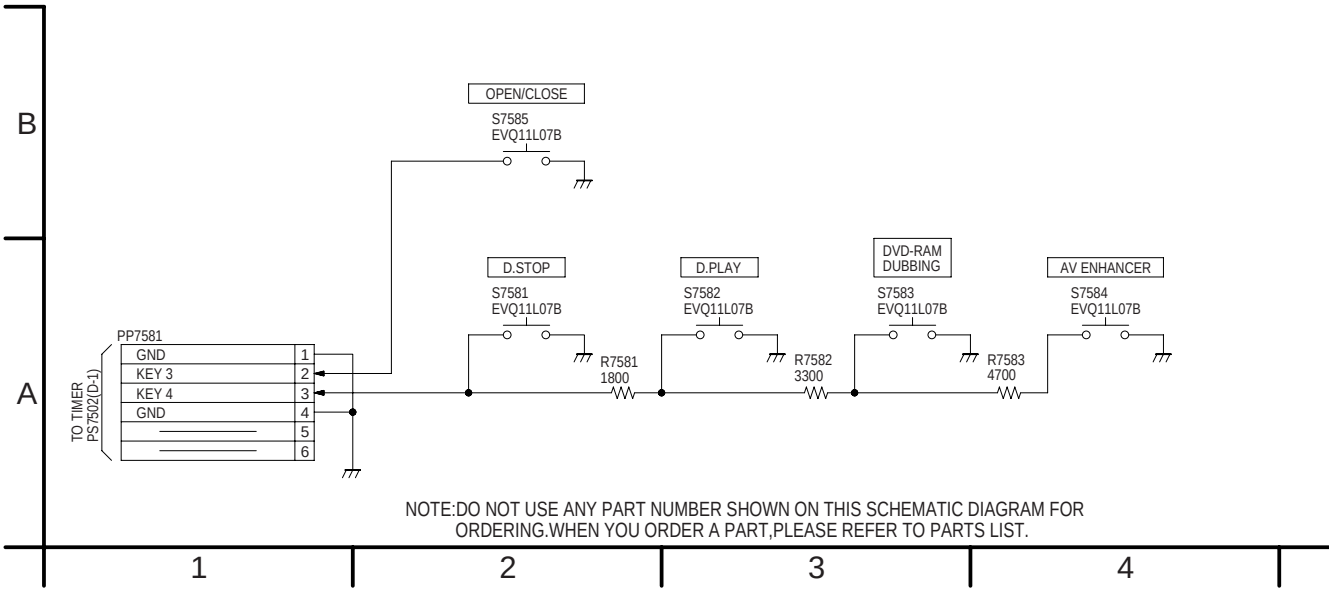


DE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
DE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

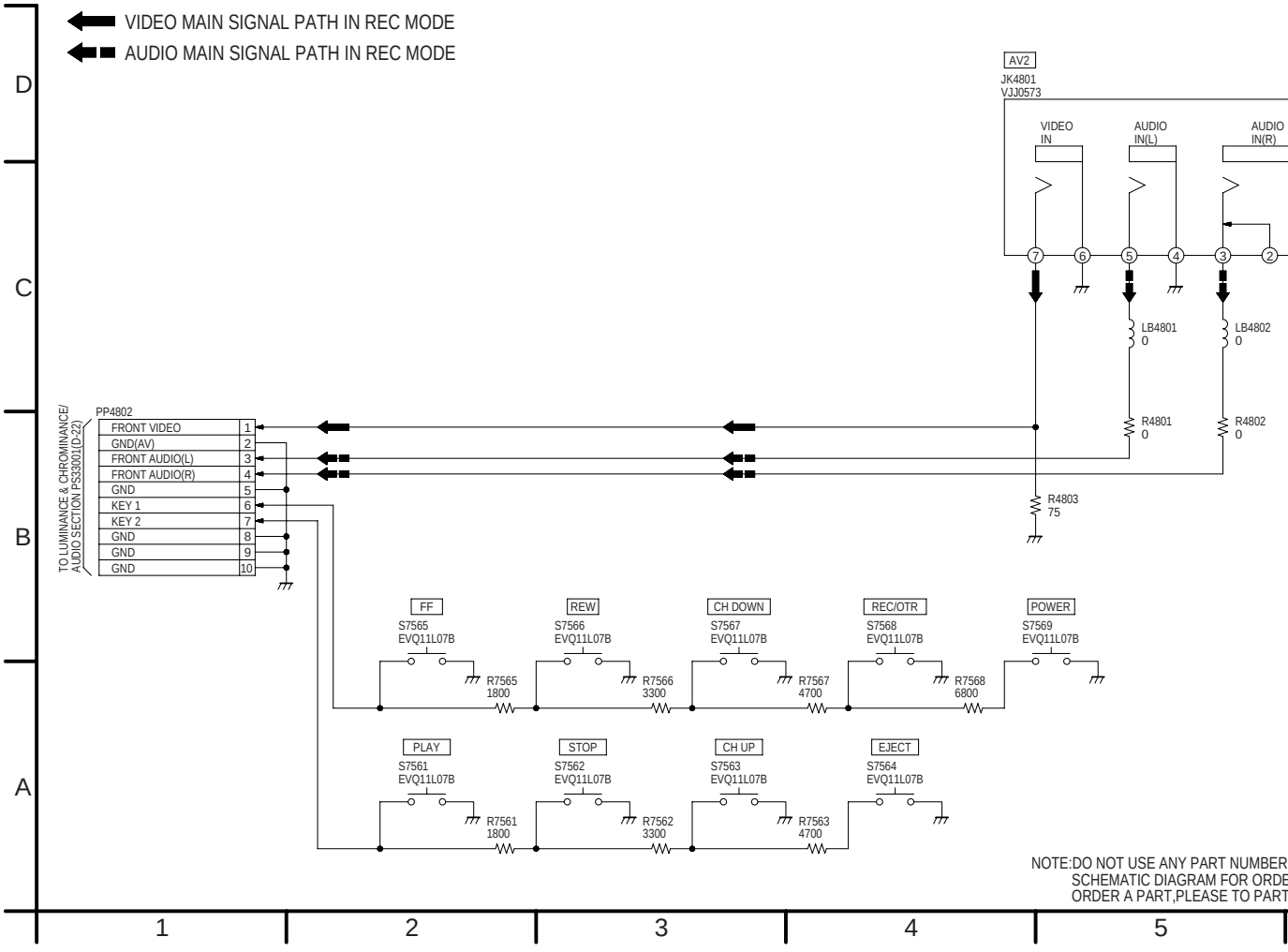
NV-VP32GL/GC/GCS
DVD INTERFACE SECTION SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

16.9. FRONT SW SCHEMATIC DIAGRAM

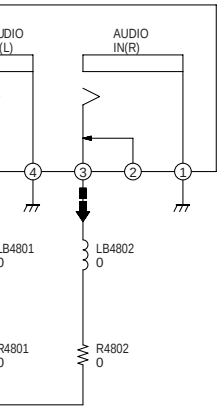


16.10. FRONT JACK SCHEMATIC DIAGRAM



NV-VP32GL/GC/GCS
FRONT SW SCHEMATIC DIAGRAM

5

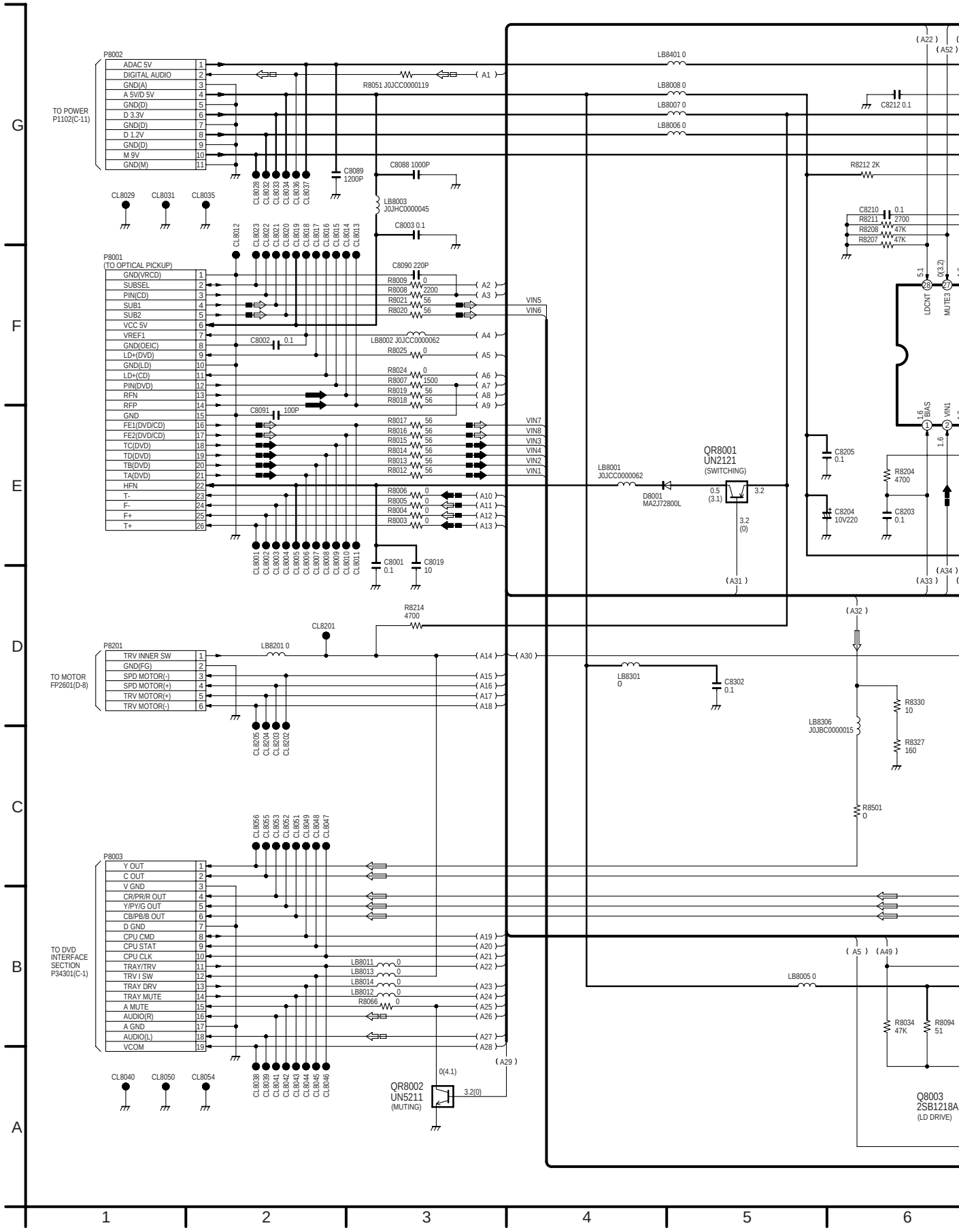


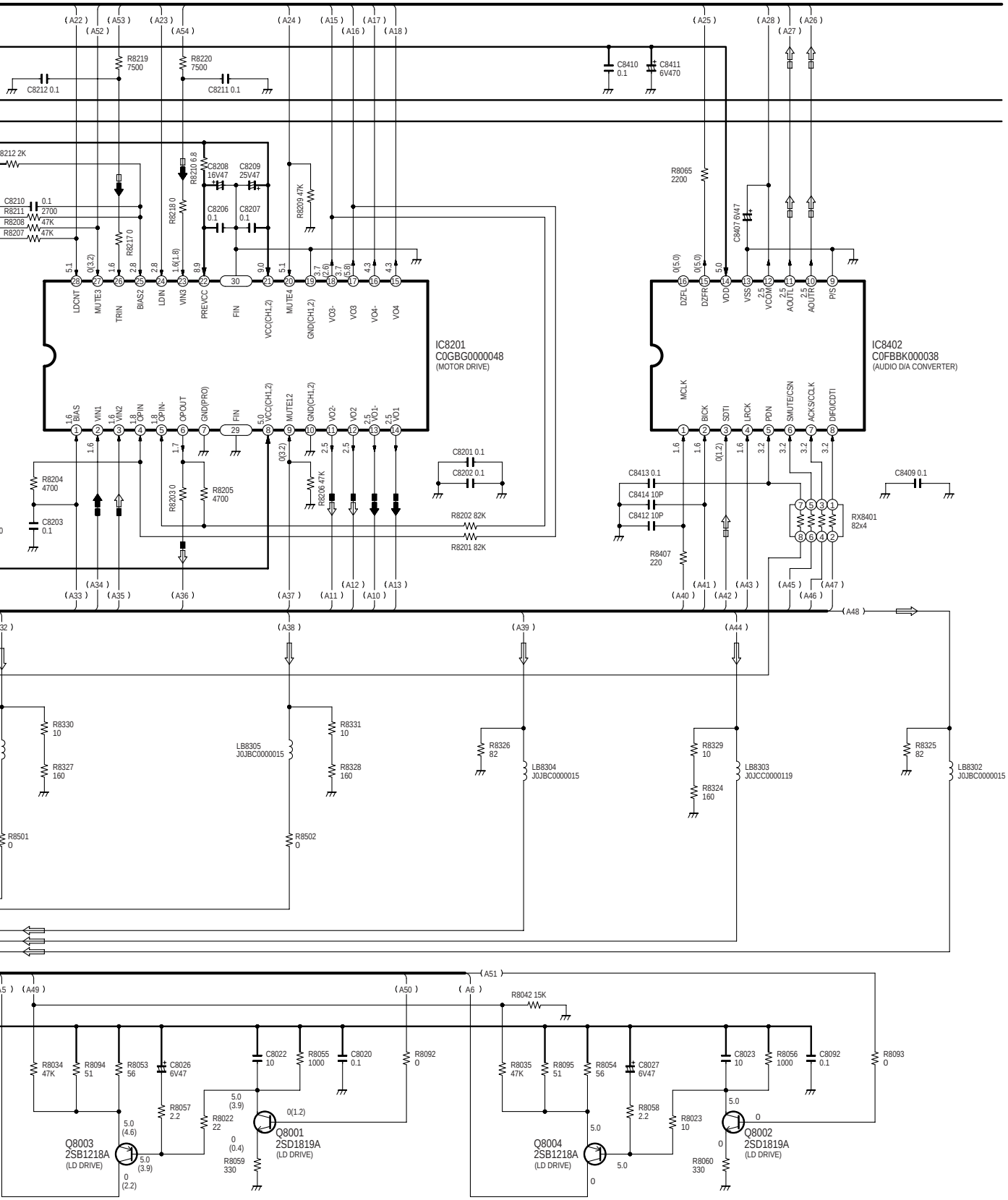
E ANY PART NUMBER SHOWN ON THIS
C DIAGRAM FOR ORDERING.WHEN YOU
ART,PLEASE TO PARTS LIST.

NV-VP32GL/GC/GCS
FRONT JACK SCHEMATIC DIAGRAM

5 6

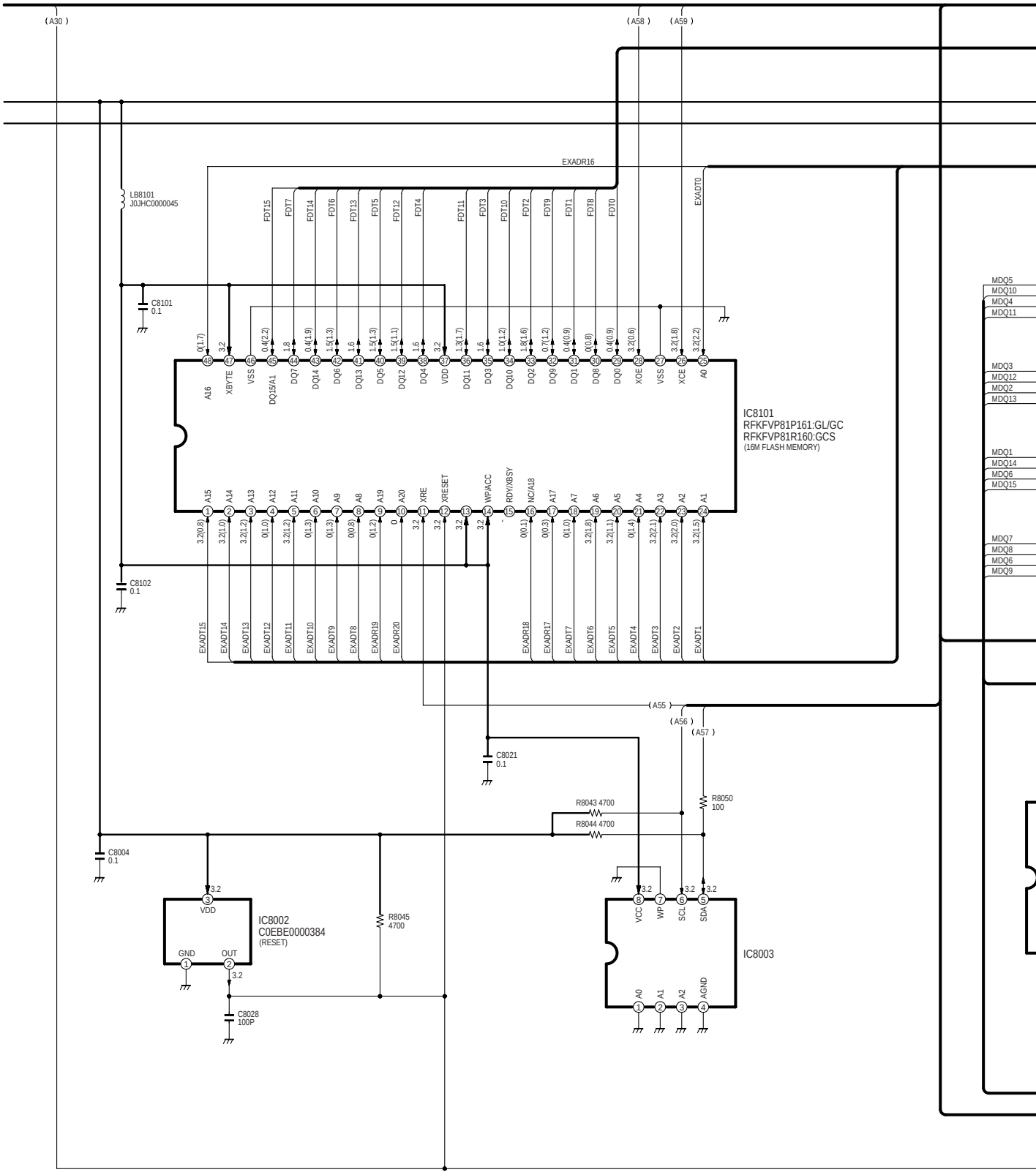
16.11. DVD MODULE SCHEMATIC DIAGRAM





NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

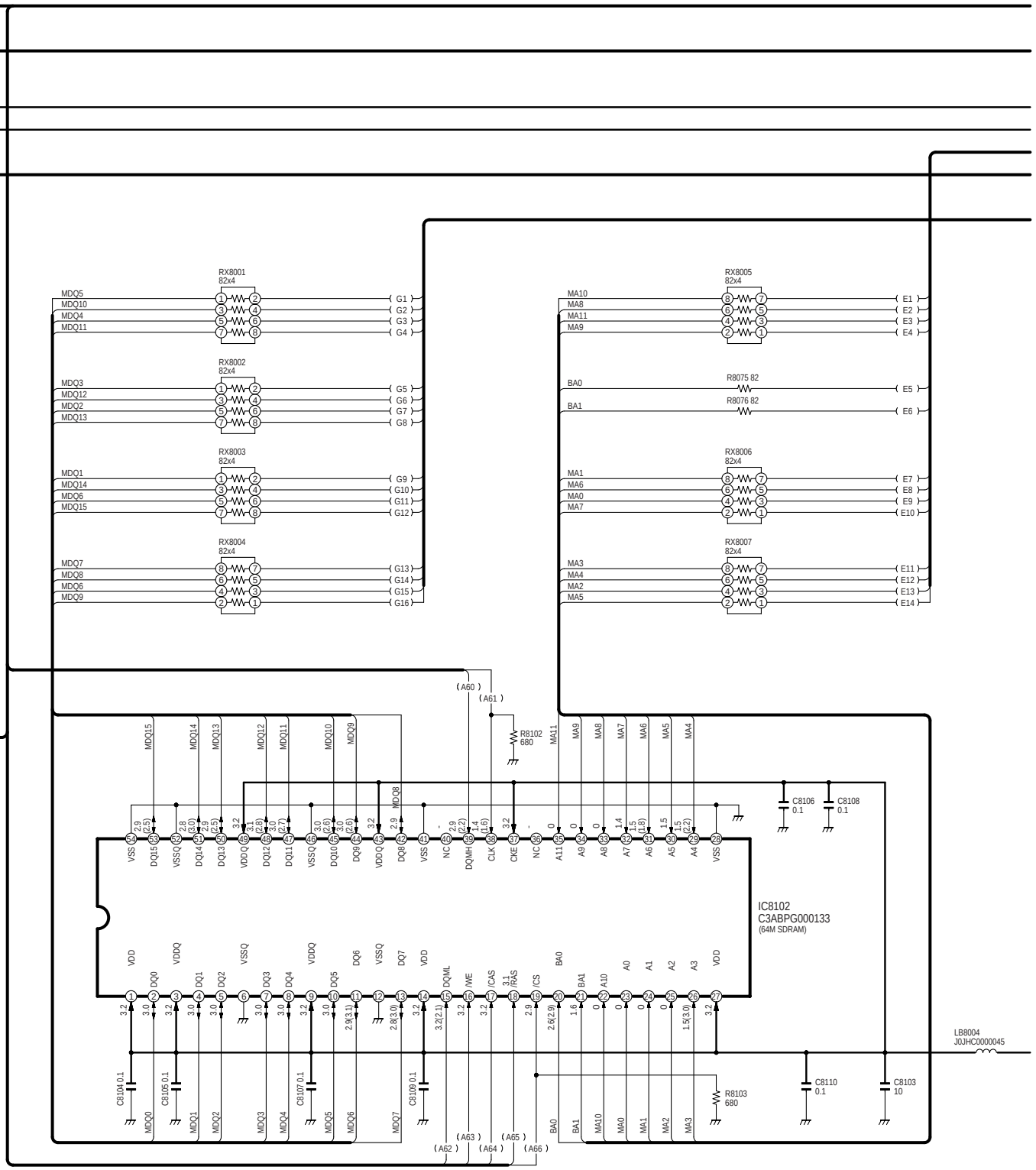
6 | 7 | 8 | 9 | 10 | 11



NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NOTE:CIRCUIT VOLTAGE AND WAVEFORM DESCRIBED HEREIN SHALL BE REGARDED AS REFERENCE
FROM AN ACTUAL MEASURING VALUE DUE TO DIFFERENCE OF MEASURING INSTRUMENT AND

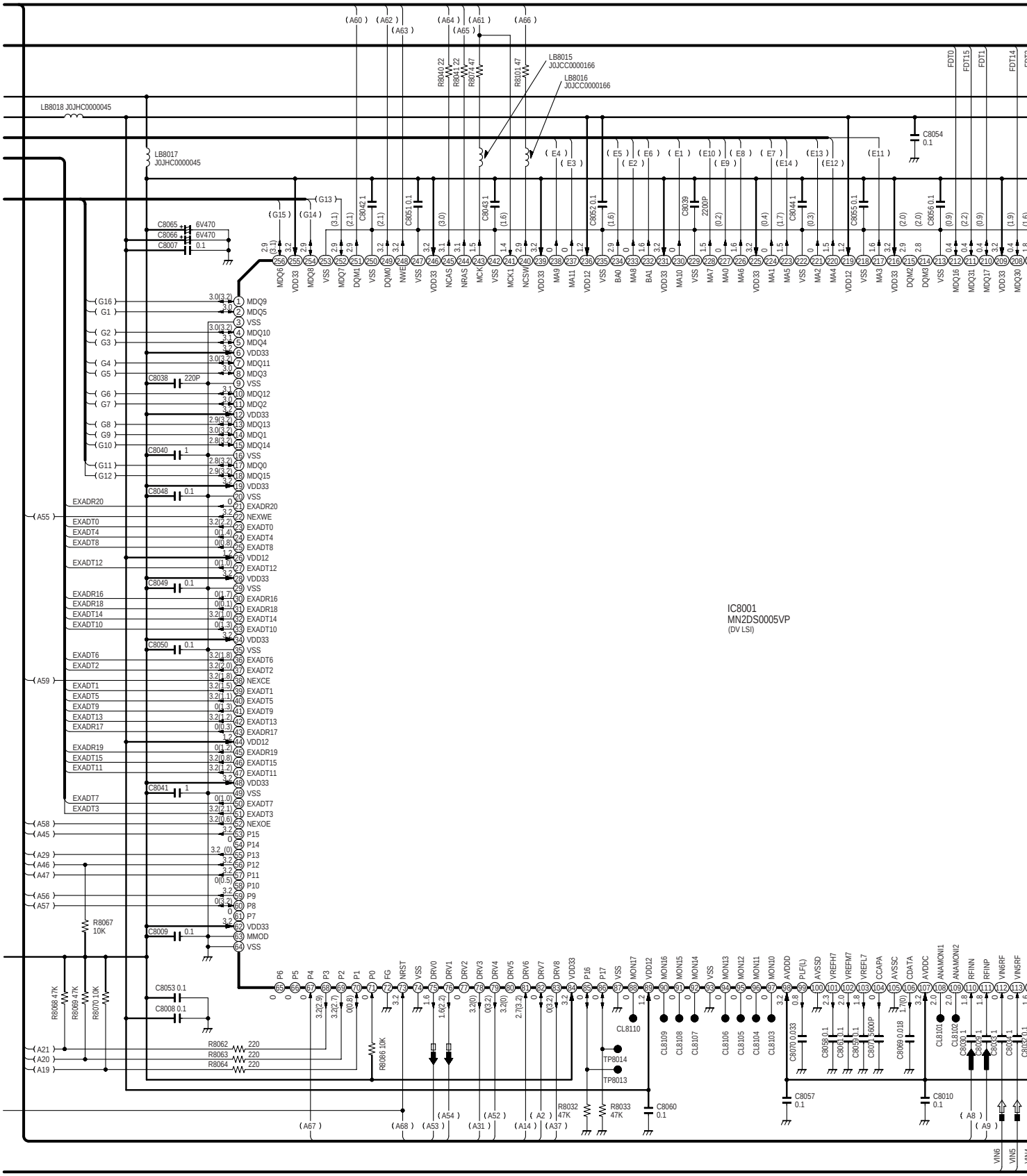
12 | 13 | 14 | 15 | 16 | 17



EGARDED AS REFERENCE INFORMATION WHEN PROBING DEFECT POINT,BECAUSE IT MAY DIFFER
URING INSTRUMENT AND ITS MEASURING CONDITION AND PRODUCT ITSELF.

NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

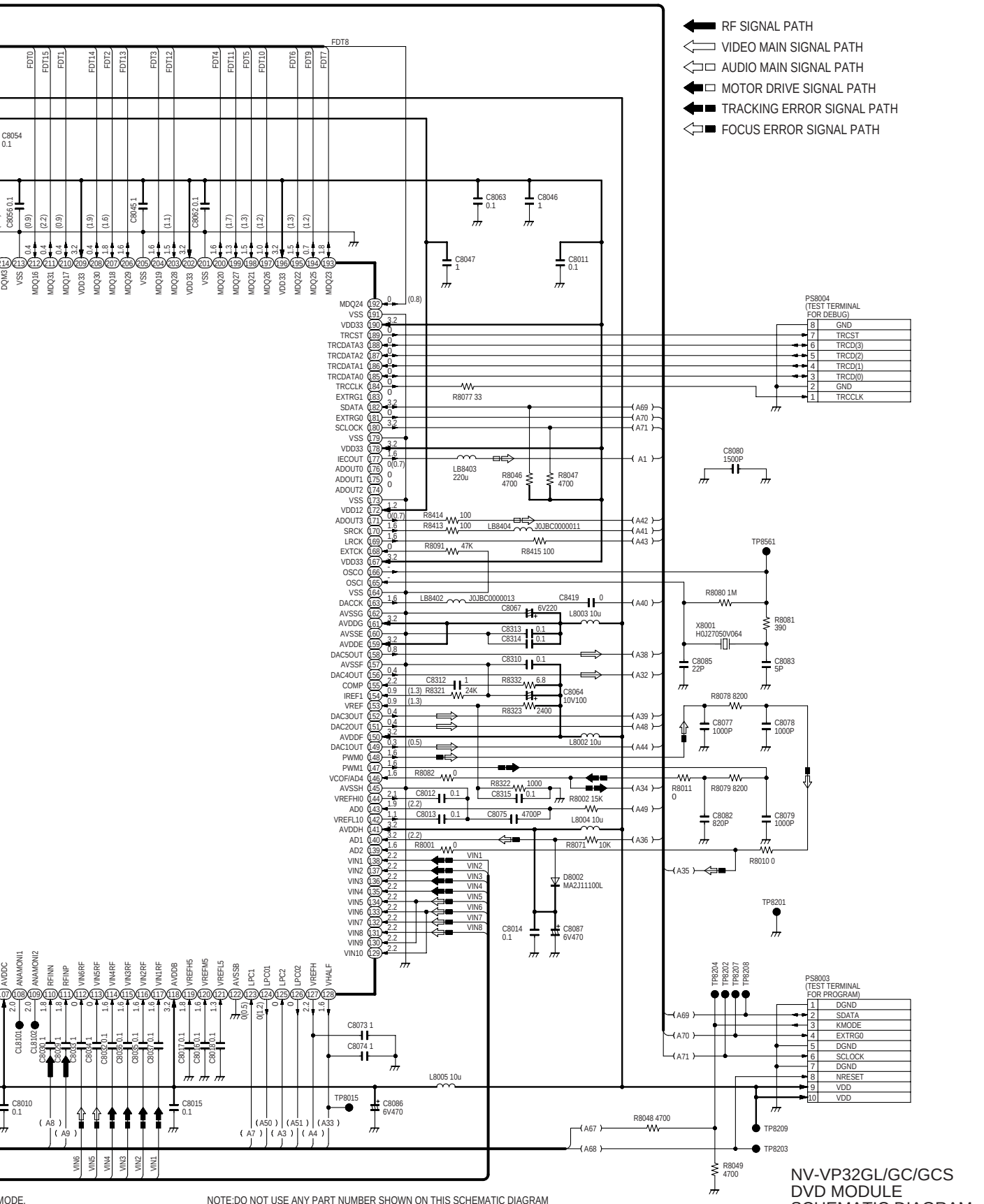
17 | 18 | 19 | 20 | 21 | 22



NV-VP32GL/GC/GCS
DVD MODULE SCHEMATIC DIAGRAM

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS DVD PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

23 | 24 | 25 | 26 | 27 | 28



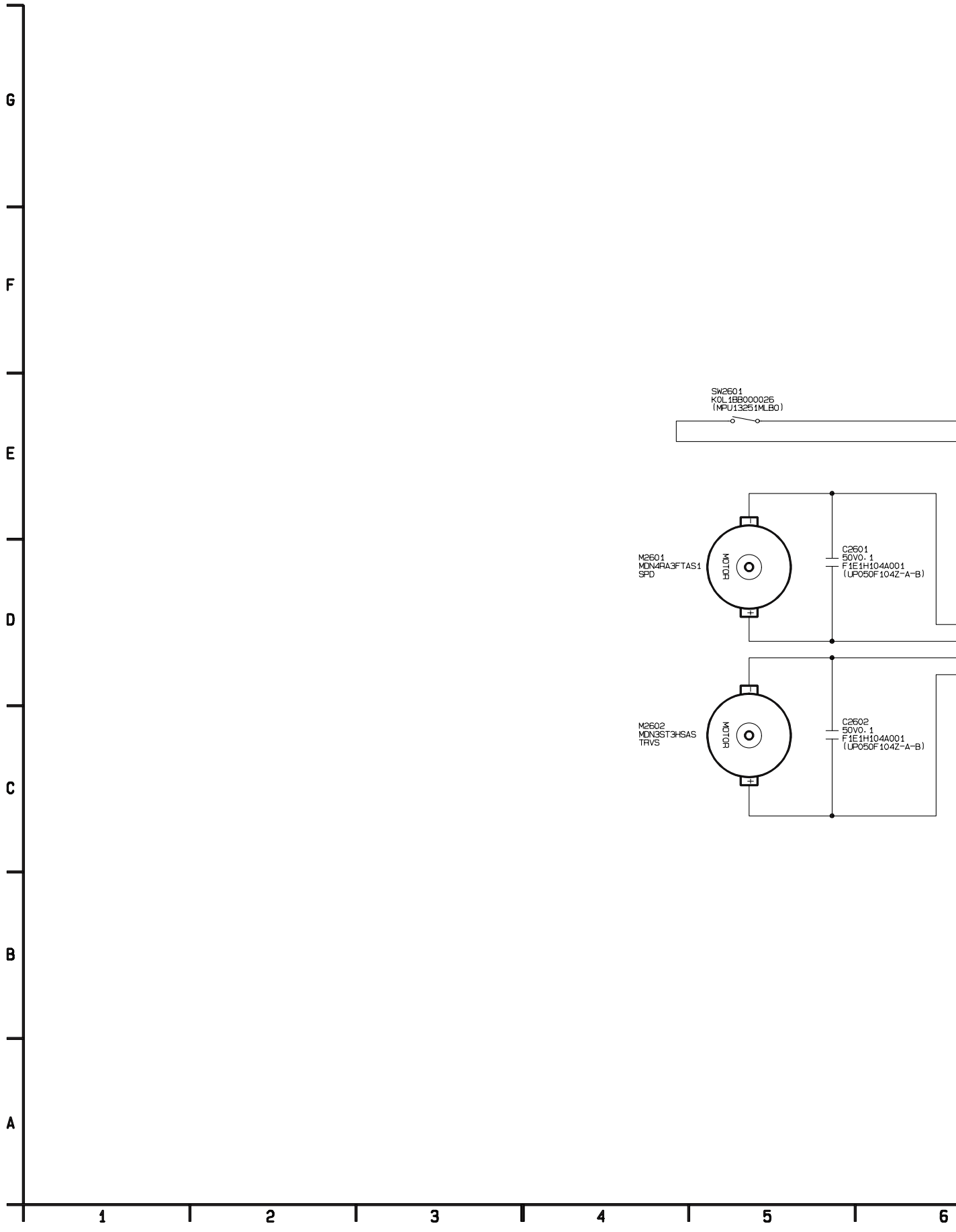
MODE.

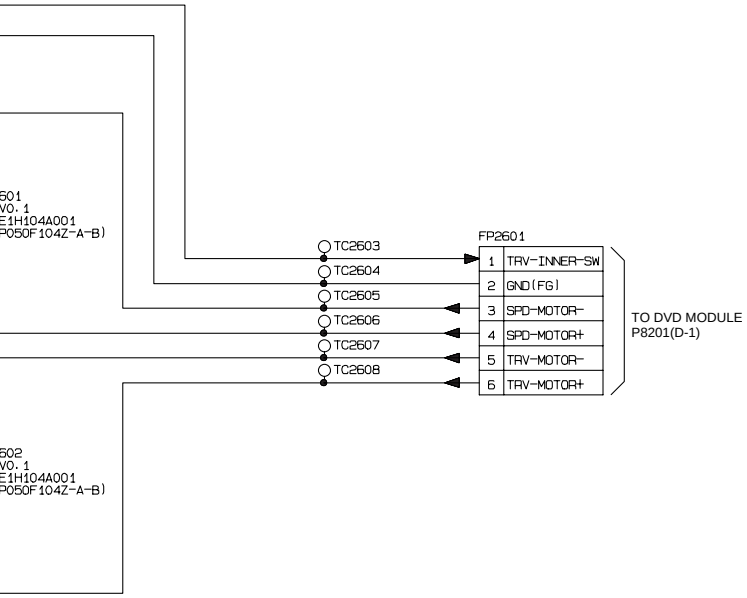
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-VP32GL/GC/GCS
DVD MODULE
SCHEMATIC DIAGRAM

29 30 31 32 33

16.12. MOTOR SCHEMATIC DIAGRAM




501
V0.1
E1H104A001
P050F104Z-A-B)
502
V0.1
E1H104A001
P050F104Z-A-B)
TC2603
TC2604
TC2605
TC2606
TC2607
TC2608
FP2601
1 TRV-INNER-SW
2 GND(FG)
3 SPD-MOTOR-
4 SPD-MOTOR+
5 TRV-MOTOR-
6 TRV-MOTOR+
TO DVD MODULE
P8201(D-1)

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

Ref. No.	IC1511					IC1512														
MODE	1	2	3	4		1	2	3	4											
STOP	1.2	2.4	5.0	0.0		0.0	1.3	5.0	0.0											
PLAY	1.2	2.4	3.5	0.0		0.0	1.3	5.0	0.0											
REC	1.2	2.4	3.5	0.0		0.0	1.3	4.9	0.0											
F.F	1.2	2.4	2.4	0.0		0.0	1.3	2.5	0.0											
REW	1.2	2.4	2.3	0.0		0.0	1.3	2.4	0.0											
Ref. No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	12.2	0.3	0.0	0.3	0.0	0.0	16.2	0.0	2.9	1.7	1.6	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.5
PLAY	12.3	0.3	0.0	0.3	0.0	0.0	16.3	0.0	2.8	1.7	1.7	0.7	1.4	2.4	2.5	2.5	2.5	1.3	5.0	3.6
REC	12.2	0.3	0.0	0.3	0.0	0.0	16.3	0.0	2.9	1.6	1.7	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.5
F.F	12.2	0.3	0.0	0.3	0.0	0.0	16.2	0.0	2.9	1.7	1.7	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.5
REW	12.3	0.3	0.0	0.3	0.0	0.0	16.2	0.0	2.8	1.7	1.7	0.7	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3..9
Ref. No.	IC2501																			
MODE	21	22	23	24	25															
STOP	12.2	3.5	3.5	0.0	3.5															
PLAY	12.3	3.6	3.6	0.0	3.6															
REC	12.2	3.6	3.5	0.0	3.6															
F.F	12.3	3.5	3.5	0.0	3.5															
REW	12.3	3.6	3.8	0.0	3.6															
Ref. No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	0.0	0.0	0.0	5.1	3.0	0.0	0.0	2.5	0.0	0.0
PLAY	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	4.0	4.9	4.9	0.0	0.0	5.1	3.0	0.0	0.0	2.5	2.5	0.0
REC	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	4.9	0.0	0.0	5.1	3.0	0.0	0.0	2.5	0.0	4.9
F.F	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	4.9	4.9	0.0	5.1	3.0	0.0	0.0	2.5	0.0	0.0
REW	0.0	5.0	4.9	4.9	5.0	5.0	4.9	4.9	3.3	4.9	4.9	4.9	0.0	5.1	3.0	0.0	0.0	2.5	0.0	0.0
Ref. No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	0.0	4.9	4.9	4.9	4.9	-	-	4.9	-	-	0.0
PLAY	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	0.0	4.9	4.9	0.0	5.0	-	-	5.0	-	-	0.0
REC	4.9	0.0	4.4	2.0	0.0	4.9	0.0	0.1	4.9	0.0	4.9	4.9	0.0	4.9	-	-	4.9	-	-	0.0
F.F	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	4.9	4.9	0.0	0.0	4.9	-	-	4.9	-	-	0.0
REW	4.9	0.0	4.4	2.0	0.0	0.0	0.0	0.1	4.9	4.9	4.9	0.0	0.0	4.9	-	-	4.9	-	-	0.0
Ref. No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.1	2.1	3.3	2.0	0.0	0.0	0.0	0.0
PLAY	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	4.9	1.7	5.2	2.1	1.6	2.0	0.0	0.0	0.0	0.0
REC	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.1	2.1	2.8	2.0	0.0	0.0	0.0	0.0
F.F	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.2	2.1	3.2	2.0	0.0	0.0	0.0	0.0
REW	0.0	0.0	0.0	4.6	4.6	0.0	1.7	2.2	0.0	1.7	0.0	1.7	5.2	2.1	3.4	2.0	0.0	0.0	0.0	0.0
Ref. No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.3	4.6	4.0	3.9	0.0	0.0	4.9	0.0	2.4	5.1	5.0	0.2
PLAY	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.2	4.6	4.0	3.9	0.0	0.0	4.9	2.5	2.4	5.2	0.1	4.2
REC	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.2	4.6	4.0	3.9	0.0	0.0	4.9	2.5	2.4	5.1	3.8	5.0
F.F	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.3	4.6	4.0	3.9	0.0	0.0	4.9	2.8	2.4	5.1	2.4	2.4
REW	4.9	0.7	0.0	0.0	0.0	0.0	0.0	4.6	3.3	4.6	4.0	3.9	0.0	0.0	4.9	4.9	2.4	5.1	2.4	2.4
Ref. No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.5	2.5	5.1	5.1	2.5
PLAY	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.6	2.6	5.1	5.2	2.5
REC	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.3	2.7	2.5	2.5	5.1	5.1	2.5
F.F	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.6	2.5	5.1	5.1	2.5
REW	0.0	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	1.3	2.6	2.6	0.0	2.5	2.5	2.6	2.7	5.2	5.2	2.5

Ref. No.	IC6201						IC6301							IC7552						
MODE	1	2	3	4	5		1	2	3	4	5	6		1	2	3				
STOP	5.1	5.1	0.0	-	-		6.1	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
PLAY	5.2	5.1	0.0	-	-		6.1	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
REC	5.1	5.1	0.0	-	-		6.0	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
F.F	5.2	5.2	0.0	-	-		6.5	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				
REW	5.1	5.2	0.0	-	-		6.3	0.0	4.9	1.2	0.0	5.0		5.1	0.0	5.1				

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

Ref. No.	Q1501				Q1502				Q7701											
MODE	+	–			+	–			E	C	B									
STOP	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
PLAY	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
REC	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
F.F	4.9	0.0			5.1	0.0			2.3	0.0	1.7									
REW	4.9	0.0			5.1	0.0			2.3	0.0	1.7									

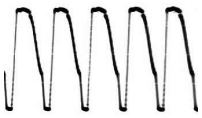
NOTE:Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point,because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

T1150-3 STOP
3.8Vp-p (2msec.div.)

T1150-5 STOP
560Vp-p (5usec.div.)

T1150-7 STOP
33Vp-p (5usec.div.)

T1150-13 STOP
76Vp-p (5usec.div.)

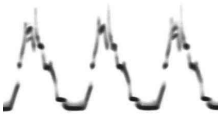


T1150-17 STOP
18Vp-p (5usec.div.)

T1150-19 STOP
40Vp-p (5usec.div.)

T1150-20 STOP
100Vp-p (5usec.div.)

Q1200-1 STOP
0.4Vp-p (5usec.div.)



IC2501-22,23,25 PLAY
7.0Vp-p (2msec.div.)

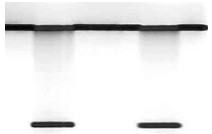
IC6001-13 STILL
5.0Vp-p (5msec.div.)

IC6001-18 REC
5.0Vp-p (10msec.div.)

IC6001-50 REC/PLAY
2.0Vp-p (20usec.div.)

IC6001-52 REC/PLAY
2.0Vp-p (20usec.div.)

IC6001-68,69 REC
5.0Vp-p (5msec.div.)

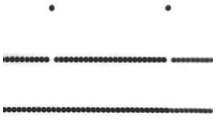


IC6001-70 REC
5.0Vp-p (5msec.div.)

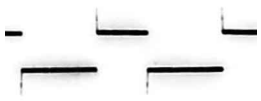
IC6001-71 REC
5.0Vp-p (5usec.div.)

IC6001-72 REC
5.0Vp-p (5msec.div.)

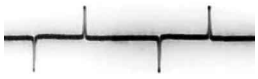
IC6001-79,80 FF/REW
5.0Vp-p (1msec.div.)



IC6001-90 REC
5.0Vp-p (10msec.div.)



IC6001-94,95 REC
6.8Vp-p (10msec.div.)



IC6001-97 PLAY
0.8Vp-p (10msec.div.)

IC3001-6 REC/PLAY
0.8Vp-p (0.5msec.div.)

IC3001-17,21 REC
1.0Vp-p (20µsec.div.)

IC3001-26 REC
0.5Vp-p (20µsec.div.)

IC3001-29 REC/PLAY
2.2Vp-p (20µsec.div.)

IC3001-45,46 PLAY
0.42Vp-p (20µsec.div.)

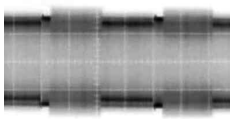
IC3001-49 PLAY
0.58Vp-p (20µsec.div.)

IC3001-73 REC/PLAY
5.0Vp-p (5msec.div.)

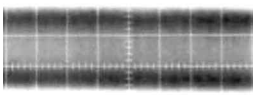
IC3001-74 REC/PLAY
5.0Vp-p (5msec.div.)

IC3001-80 REC/PLAY
0.5Vp-p (10msec.div.)

IC3001-85 PLAY
180mVp-p (20µsec.div.)

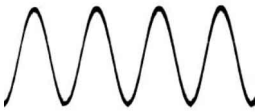


IC3001-86 REC
1.4Vp-p (5msec.div.)

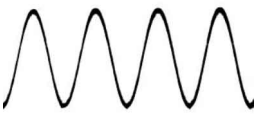


IC3001-87 PLAY
150mVp-p (20µsec.div.)

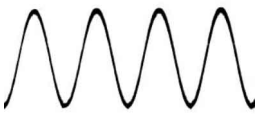
IC3001-96 PLAY
5.0Vp-p (5msec.div.)



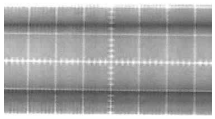
IC3001-98 REC
1.4Vp-p (0.5msec.div.)



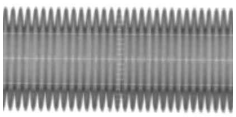
IC4501-2,4 REC
0.4Vp-p (0.5msec.div.)



IC4501-9,14 REC
0.4Vp-p (0.5msec.div.)

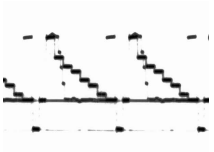
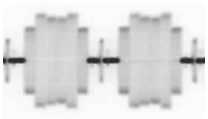
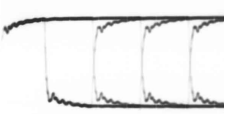
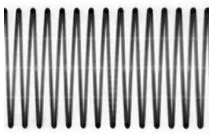
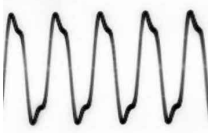
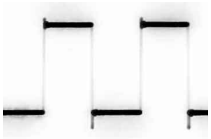
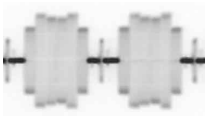
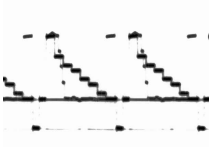
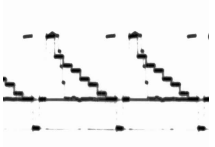
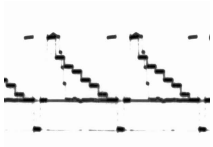
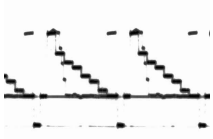
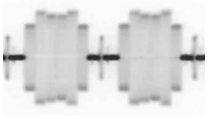
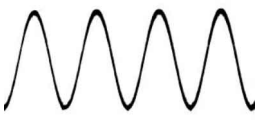


IC4501-21 REC
1.4Vp-p (20usec.div.)



IC4501-22,24 PLAY
1.4Vp-p (20usec.div.)

IC4501-53,57 REC/PLAY
1.8Vp-p (0.5msec.div.)

IC8001-68 PLAY (DVD) 3.0Vp-p (0.1msec.div.)	IC8001-69 PLAY (DVD) 3.0Vp-p (2msec.div.)	IC8001-70 PLAY (DVD) 3.0Vp-p (2msec.div.)	 IC8001-149,156 PLAY (DVD) 0.92Vp-p (20µsec.div.)	IC8001-151 PLAY (DVD) 0.5Vp-p (20µsec.div.)
IC8001-152 PLAY (DVD) 0.5Vp-p (20µsec.div.)	 IC8001-158 PLAY (DVD) 0.6Vp-p (20µsec.div.)	 IC8001-171 PLAY (DVD) 6Vp-p (10µsec.div.)	 IC8402-1 PLAY (DVD) 0.7Vp-p (50nsec.div.)	 IC8402-2 PLAY (DVD) 4.2Vp-p (0.2µsec.div.)
 IC8402-4 PLAY (DVD) 3.5Vp-p (5µsec.div.)	IC8402-10,11 PLAY (DVD) 0.3Vp-p (0.5msec.div.)	 IC33501-2 PLAY (DVD) 0.68Vp-p (20µsec.div.)	 IC33501-6 PLAY (DVD) 1.0Vp-p (20µsec.div.)	 IC33501-12 PLAY (DVD) 1.0Vp-p (20µsec.div.)
IC33501-14 PLAY (DVD) 0.48Vp-p (20µsec.div.)	IC33501-16 PLAY (DVD) 0.48Vp-p (20µsec.div.)	IC33501-18 PLAY (DVD) 1.0Vp-p (20µsec.div.)	IC33501-21 PLAY (DVD) 1.0Vp-p (20µsec.div.)	 IC33501-24 PLAY (DVD) 2.0Vp-p (20µsec.div.)
 IC33501-27 PLAY (DVD) 2.0Vp-p (20µsec.div.)	IC33501-30 PLAY (DVD) 2.0Vp-p (20µsec.div.)	 IC33501-32 PLAY (DVD) 1.4Vp-p (20µsec.div.)	 IC34301-1,7 PLAY (DVD) 1.0Vp-p (0.5msec.div.)	IC34301-3,5 PLAY (DVD) 0.3Vp-p (0.5msec.div.)

443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ
BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (–)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (–)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [–]	CONTROL HEAD (–)
CTL [+]	CONTROL HEAD (+)
CTL [–]	CONTROL HEAD (–)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL

CYL GND	CYLINDER GND
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
D. FM REC [L]	DELAIED FM RECORDING Ⓛ
D. GND	DIGITAL GND
D. REC [H]	DELAYED RECORDING Ⓗ
D4/S. LED	D4/STILL LED
D4/STILLED	D4/STILL LED
DAC [CLK]	TUNER DAC (CLOCK)
DAC/FSCS	TUNER DAC/FS CHIP SELECT
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ
DATA	DATA
DECODER [L]	DECODER (L)
DECODER [R]	DECODER (R)
DEW	DEW
DEW SNS	DEW SENSOR
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ
E. REC 5V	EXCEPT RECORDING 5V
EC	ERROR TORQUE CONTROL
ECR	ERROR TORQUE CONTROL REFERENCE VOLTAGE
EDT TRIG [L]	EDIT TRIGGER Ⓛ
EDIT [H]	EDIT Ⓗ
EE [H]	EE Ⓗ
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ
EE. VV. TR	EE/VV/TRICK PLAY
EJECT. PO	EJECT POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK
ENV. SEL	ENVELOPE SELECT
ENVE. OUT	ENVELOPE OUTPUT
ENVE. SEL	ENVELOPE SELECT
ENV SELECT	ENVELOPE SELECT
EP [H]	LP Ⓗ
EP/LP [H]	LP Ⓗ
EP/LP/SP	LP/SP
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ
EPROMCS	EPROM CHIP SELECT
EX. REC 5V	EXCEPT RECORDING 5V
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ
FG1 IN	FG1 PULSE INPUT
FG2 IN	FG2 PULSE INPUT
FILTER ADJUSTMENT	FILTER ADJUSTMENT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ
FM MUT [H]	FM AUDIO MUTE Ⓗ
FM MUTE [H]	FM AUDIO MUTE Ⓗ
FM OUT [L]	FM OUTPUT (L)
FM OUT [R]	FM OUTPUT (R)
FM PACK OUT [L]	FM PACK OUTPUT (L)
FM PACK OUT [R]	FM PACK OUTPUT (R)
FM/BS SEL [L]	FM/BS SELECT (L)
FM/BS SEL [R]	FM/BS SELECT (R)
FS. CLK	FS CLOCK
FUL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E [H]	FULL ERASE HEAD ON Ⓗ

FULL. E. 12V	FULL ERASE 12V
GND [A]	GND (ANALOG)
GND [TU]	GND (TUNER)
GND/N. SW. 12V	GND/NON SW 12V
H. SYNC	HORIZONTAL SYNC
H. AMP. SW	HEAD AMP SW PULSE
H. P <R>	HEAD PHONE (R)
H. P <L>	HEAD PHONE (L)
H. P GND	HEAD PHONE GND
H. P OUT [L]	HEAD PHONE OUTPUT (L)
H. P OUT [R]	HEAD PHONE OUTPUT (R)
H. SW	HEAD SW PULSE
HEAD PHONE [L]	HEAD PHONE (L)
HEAD PHONE [R]	HEAD PHONE (R)
HEAD SW	HEAD SW
HEATER [+]	HEATER (+)
HEATER [–]	HEATER (–)
HSS	HORIZONTAL SYNC SIGNAL
HTR [+]	HEATER (+)
HTR [–]	HEATER (–)
I RFE	REFERENCE CURRENT
ICL	CONTROL AGC CIRCUIT
IF	INTERMEDIATE FREQUENCY
IN SELA1	INPUT SELECT A1 POSITION
IN SELA2	INPUT SELECT A2 POSITION
IN SELA3	INPUT SELECT A3 POSITION
INS L/R [L]	INSERT Lch/Rch Ⓛ
INS. [H]	INSERT Ⓗ
INSEL A1	INPUT SELECT A1 POSITION
INSEL A2	INPUT SELECT A2 POSITION
INSERT	INSERT
INSERT [H]	INSERT Ⓗ
IO CS	INPUT/OUTPUT CHIP SELECT
JOG1	JOG1
JOG S3 LED/FOWRD	JOG LED/FORWARD LED
JOG/F. LED	JOG LED/FORWARD LED
JSB [H]	JSB Ⓗ
JST. CLCK	JUST CLOCK
JST. CLK	JUST CLOCK
JST. CLOCK	JUST CLOCK
L. OUT	Lch OUTPUT
L. CH [H]	Lch Ⓗ
L. CH [L]	Lch Ⓛ
LED (MAIN)	LED (MAIN)
LED (STEREO)	LED (STEREO)
LED (SUB)	LED (SUB)
LED CKL	LED SERIAL CLOCK
LED CKS	LED SERIAL CLOCK
LED DATA	LED SERIAL DATA
LINE IN 1 [L]	LINE INPUT 1 (L)
LINE IN 1 [R]	LINE INPUT 1 (R)
LINE IN 2 [L]	LINE INPUT 2 (L)
LINE IN 2 [R]	LINE INPUT 2 (R)
LINE IN V	LINE INPUT VIDEO
LINE IN [L]	LINE INPUT (L)

LINE IN [R]	LINE INPUT (R)
LINE OUT [L]	LINE OUTPUT (L)
LINE OUT [R]	LINE OUTPUT (R)
LP [H]	LP Ⓗ
LPTRI [L]	LP TRICK PLAY Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING
M GND	MOTOR GND
M REG	MOTOR REGULATOR
MAIN OUT	MAIN OUTPUT
MAIN [L]	MAIN Ⓛ
MAIN/MONO	MAIN/MONAURAL
MAX IN	MAXIMAM INPUT
MES [H]	MESECAM Ⓗ
MESE [H]	MESECAM Ⓗ
MESE [L]	MESECAM Ⓛ
METER 5V	LEVEL METER 5V
METER [L]	LEVEL METER (L)
METER [R]	LEVEL METER (R)
METER. L/AVS	LEVEL METER (L)
METER. R/AVC	LEVEL METER (R)
MI/BI [L]	MIX Ⓗ/BILIGUAL
MIC GND	MIC GND
MIC IN	MIC INPUT
MIC IN [L]	MIC INPUT (L)
MIC IN [R]	MIC INPUT (R)
MIC [H]	MIC Ⓗ
MIX [H]	MIX Ⓗ
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ
MODE SEL	AUDIO MODE SELECT
MODE SW	AUDIO MODE SW
MODE. S. IN	AUDIO MODE SELECT INPUT
MODE. S. OUT	AUDIO MODE SELECT OUTPUT
MONO [H]	MONAURAL Ⓗ
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ
MONO2 [L]	MONAURAL 2
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)
MOTOR GND	MOTOR GND
MUTE	MUTE
N. A. REC [L]	NORMAL AUDIO RECORDING
N. SW 12V	NON SW 12V
N. SW. 5. DET	NON SW 5V DETECT
NICAM	NICAM
NICAM [L]	NICAM Ⓛ
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ
NORMAL [H]	NORMAL Ⓗ
NR BIAS	NR BIAS
NTSC [L]	NTSC Ⓛ
OCH	CONTROL AGC CIRCUIT
OUT	OUTPUT

P-OFF [H]	POWER OFF Ⓗ
P-OFF [L]	POWER OFF Ⓛ
P. FAIL	POWER FAILURE DETECT
P. OFF [H]	POWER OFF Ⓗ
P. OFF [L]	POWER OFF Ⓛ
PAL [H]	PAL Ⓗ
PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
PB ADJ OUT	PLAYBACK ADJUST OUTPUT
PB OUT	PLAYBACK OUTPUT
PB. H	PLAYBACK Ⓗ
PFG	PG/FG
PHOTSN +B	PHOTO SENSOR +B
PICT. CNT	PICTURE CONTROL
PLAY LED/RVS LED	PLAY LED/REVERSE LED
PLAY. PO	PLAY POSITION
PLAY/R. LED	PLAY LED/REVERSE LED
PLY/DEW	PLAY/DEW Ⓗ
POWER OFF [L]	POWER OFF Ⓛ
PREROLL [H]	PREROLL Ⓗ
PWRFAIL	POWER FAILURE DETECT
R. CH [H]	Rch Ⓗ
R. CH [L]	Rch Ⓛ
R. ST	RESET
R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
RCH [H]	Rch Ⓗ
REC 12V	RECORDING 12V
REC CHROMA	RECORDING CHROMINANCE SIGNAL
REC H	RECORDING Ⓗ
REC IN	RECORDING INPUT
REC OUT [L]	RECORDING OUTPUT Ⓛ
REC START	RECORDING START
REC VR [C]	RECORDING VOLUME (COMMON)
REC VR [L]	RECORDING VOLUME (L)
REC VR [R]	RECORDING VOLUME (R)
REC Y	RECORDING LUMINANCE SIGNAL
REC [H]	RECORDING Ⓗ
REC. C	RECORDING CHROMINANCE SIGNAL
REC. Y	RECORDING LUMINANCE SIGNAL
REC/EE CTL	RECORDING/EE CONTROL
REEL-T	REEL PULSE (TAKE-UP)
REEL-S	REEL PULSE (SUPPLY)
REGULATOR FILTER	REGULATOR FILTER
RESET	RESET
REV M F/R	REVIEW MOTOR FORWARD/REVERSE
REV M V1	REVIEW MOTOR V1
REV M V2	REVIEW MOTOR V2
REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
REV MOTOR V1	REVIEW MOTOR V1
REV MOTOR V2	REVIEW MOTOR V2
REV MOTOR [+]	REVIEW MOTOR (+)
REV MOTOR [–]	REVIEW MOTOR (+)
REV. M. GND	REVIEW MOTOR GND
RF. CHROMA	RF CHROMINANCE SIGNAL

RF OUT	RF OUTPUT
RF Y	RF LUMINANCE SIGNAL
RF. Y. IN	RF LUMINANCE SIGNAL INPUT
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT
ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [–]	SOLENOID (–)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	REFERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

AV2 IN
JK4801
(FRONT JACK)
IN (R)
IN (L)
FRONT AUDIO(R)
FRONT AUDIO(L)
PP4802 PS33001 4
PP4802 PS33001 3

IC4501

FROM DVD INTERFACE
MIX OUT(R)
MIX OUT(L)

AV1 IN
VHS/DVD OUT
JK33001
(REAR JACK)
IN (R)
IN (L)
AUDIO IN (R)
AUDIO IN (L)
TL4406 TL4506 TL4405 TL4505

OUT (R)
OUT (L)
AUDIO OUT (R)
AUDIO OUT (L)
TL4404 TL4504 TL4403 TL4503
QR4406 MUTE
QR4405 MUTE

TO TUNER
RFC AUDIO OUT
QR4651 MUTE

(GL)
FROM DECODER
TUNER AUDIO(R)
TUNER AUDIO(L)

(GC/GCS)
IC3001
FROM TUNER/ DECODER
TUNER AUDIO(N)
MUTE
REC EQ
MUTE
VCA
R
P
P4002 4
P4002 3
AUDIO HEAD
fh TRAP
MUTE CTL
MUTE CTL

FROM SYSTEM CONTROL
FM MUTE (H)

INPUT SELECT SWITCH RCH
INPUT SELECT SWITCH LCH
OUTPUT SELECT SWITCH RCH
OUTPUT SELECT SWITCH LCH
PNR RCH
PNR LCH
NORMAL SELECT SWITCH

AGC & SWITCH
FM MODULATOR/ DEMODULATOR
LPF
BPF
BPF
LPF
FM MODULATOR/ DEMODULATOR
AGC & SWITCH

IIC BUS INTERFACE
TL4501 TL4502
IIC CLOCK
IIC DATA
TO/FROM SYSTEM CONTROL

VCO F0
FSC
FROM LUMINANCE & CHROMINANCE

AUDIO H.SW
FROM SYSTEM CONTROL

TW4502
D.REC (H)
FROM SYSTEM CONTROL

PREAMP & SWITCH
AGC
P5001 7
P5001 8
P5001 9
L
R
Hi-Fi AUDIO HEAD

NV-VP32GL/GC/GCS
AUDIO BLOCK DIAGRAM

RF SIGNAL　MOTOR DRIVE SIGNAL　TRACKING ERROR SIGNAL　FOCUS ERROR SIGNAL

OPTICAL PICK UP UNIT

PHOTO DETECTOR
B1 B2 A1 A2 A4 A3 B4 B3

HEAD AMP

P8001 21 TA(DVD)
P8001 20 TB(DVD)
P8001 18 TC(DVD)
P8001 19 TD(DVD)
P8001 4 SUB1
P8001 5 SUB2
P8001 16 FE1(DVD/CD)
P8001 17 FE2(DVD/CD)
P8001 13 RFN
P8001 14 RFP

LASER DIODE (DVD)
P8001 9 LD+(DVD)
Q8001,Q8003 LD DRIVE
P8001 12 PIN(DVD)

LASER DIODE (CD)
P8001 11 LD+(CD)
Q8002,Q8004 LD DRIVE
P8001 3 PIN(CD)

ACTUATOR
TRACKING COIL
P8001 26 T+
P8001 23 T-
FOCUS COIL
P8001 25 F+
P8001 24 F-

IC8001 (DV LSI)
138 VIN1
137 VIN2
136 VIN3
135 VIN4
134 VIN5
133 VIN6
132 VIN7
131 VIN8
130 VIN9
129 VIN10
110 RFINN
111 RFINP
124 LPCO1
123 LPC1
126 LPCO2
125 LPC2

DRV8 83
DRV4 79
DRV0 75
PWM0 148
PWM1 147
DRV1 76
AD1 140

IC8201 (MOTOR DRIVE)
9 CH1,2 MUTE
27 CH3 MUTE
26 TRIN
BIAS1
3 VIN2
2 VIN1
23 VIN3
6 OPOUT
14 VO1+
13 VO1-
12 VO2+
11 VO2-

CH1 CH2 LEVEL SHIFT

BIAS2
LDIN 24
TRAY DRV P8003 P34301 13 FROM DVD INTERFACE (VCR MAIN)

CH4 VO4+ 15 P8201 FP8251 6 M2602 TRAVERS MOTOR
CH4 VO4- 16 P8201 FP8251 5
(VCC2-Vf)/2

CH3 VO3+ 17 P8201 FP8251 4 M2601 SPINDLE MOTOR
CH3 VO3- 18 P8201 FP8251 3
(VCC2-Vf)/2

OPIN- 5
OPIN+ 4

CH4 MUTE 20 TRAY MUTE P8003 P34301 14 P8003 P34301
LD CNT 28 TRAY/TRV P8003 P34301 11 P8003 P34301
FROM DVD INTERFACE (VCR MAIN)

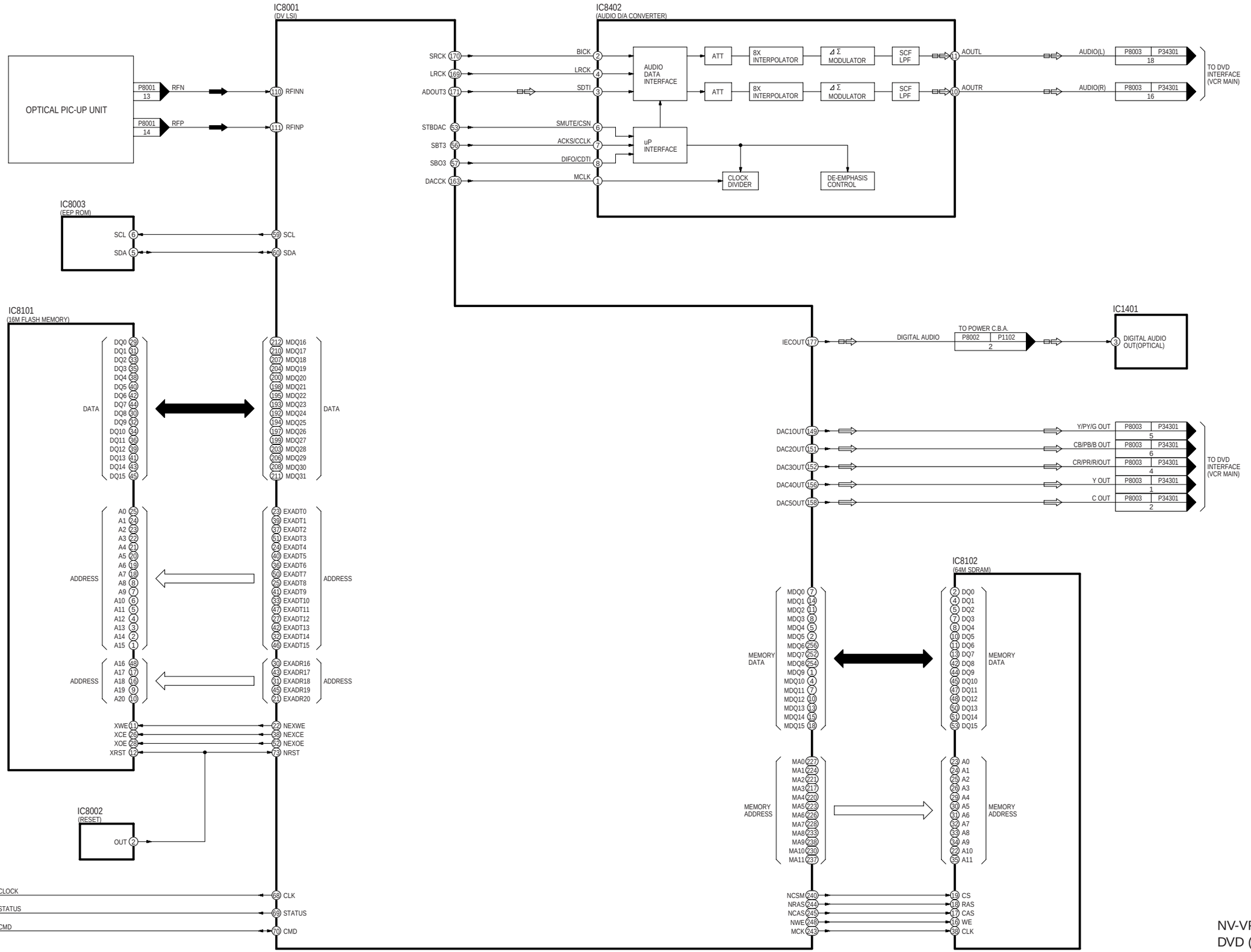
(VCC1/2)

NV-VP32GL/GC/GCS
DVD (SERVO) BLOCK DIAGRAM

RF SIGNAL PATH

VIDEO MAIN SIGNAL PATH

AUDIO MAIN SIGNAL PATH



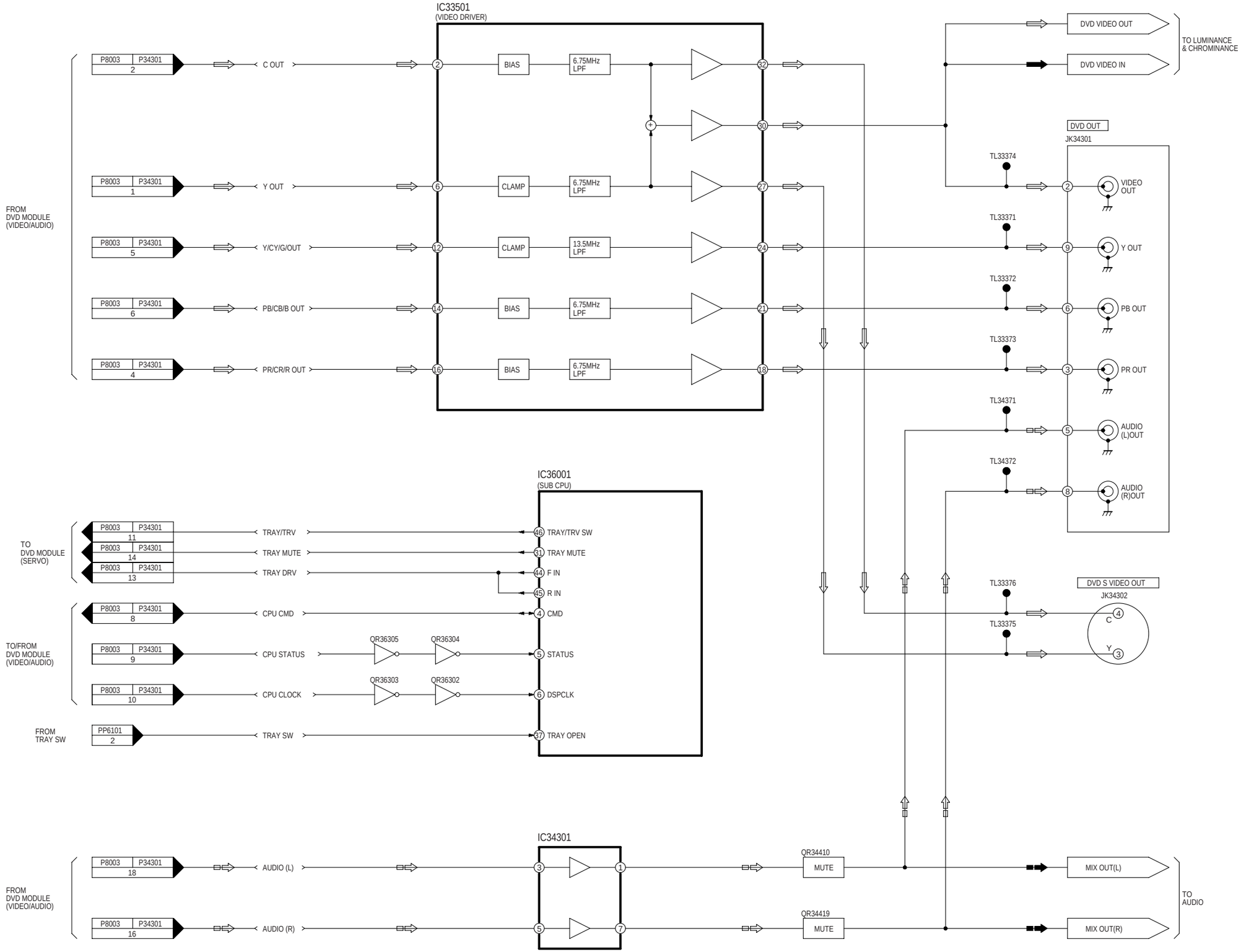
NV-VP32GL/GC/GCS
DVD (VIDEO/AUDIO)
BLOCK DIAGRAM

VCR VIDEO MAIN SIGNAL PATH IN REC MODE

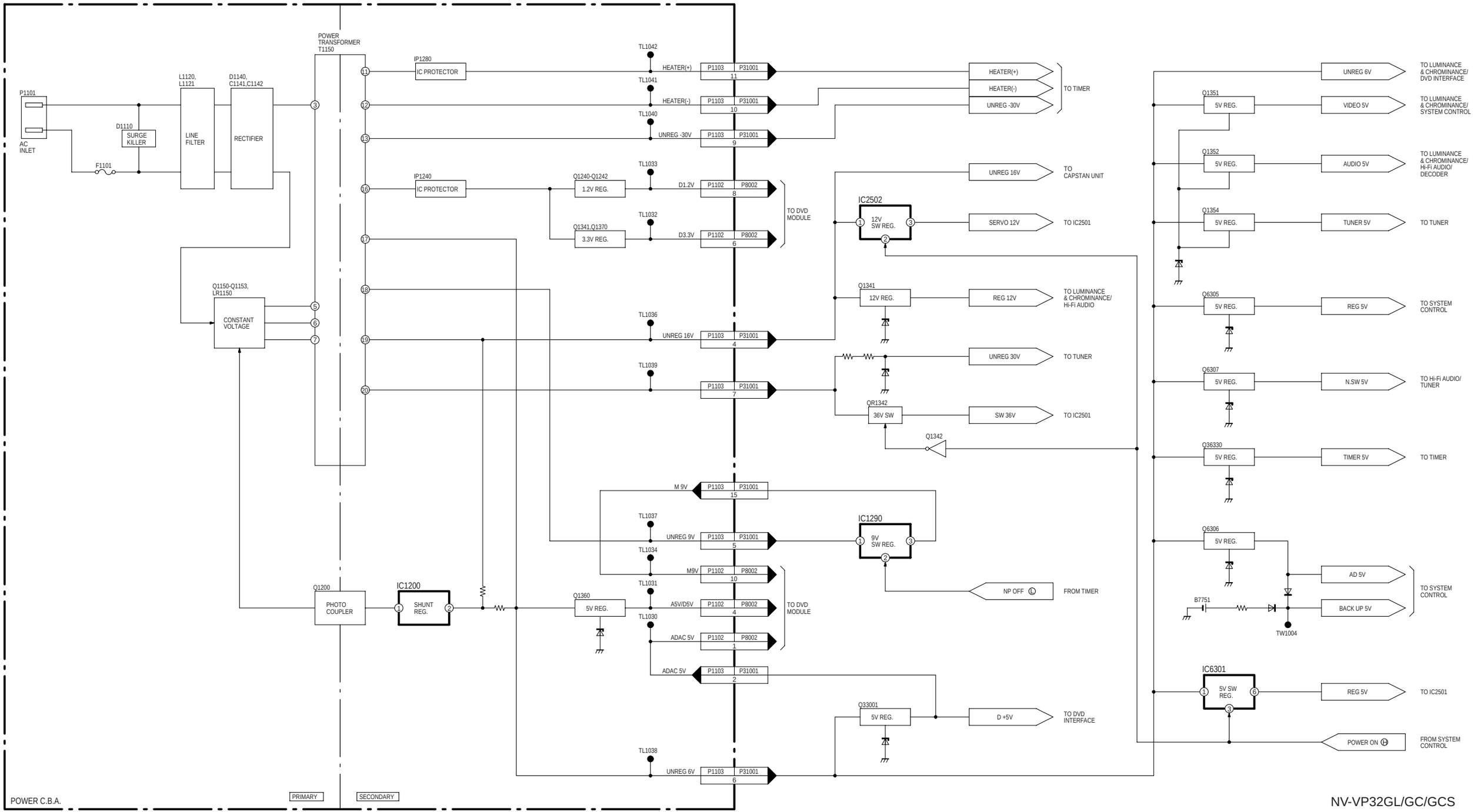
VCR AUDIO MAIN SIGNAL PATH IN REC MODE

DVD VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

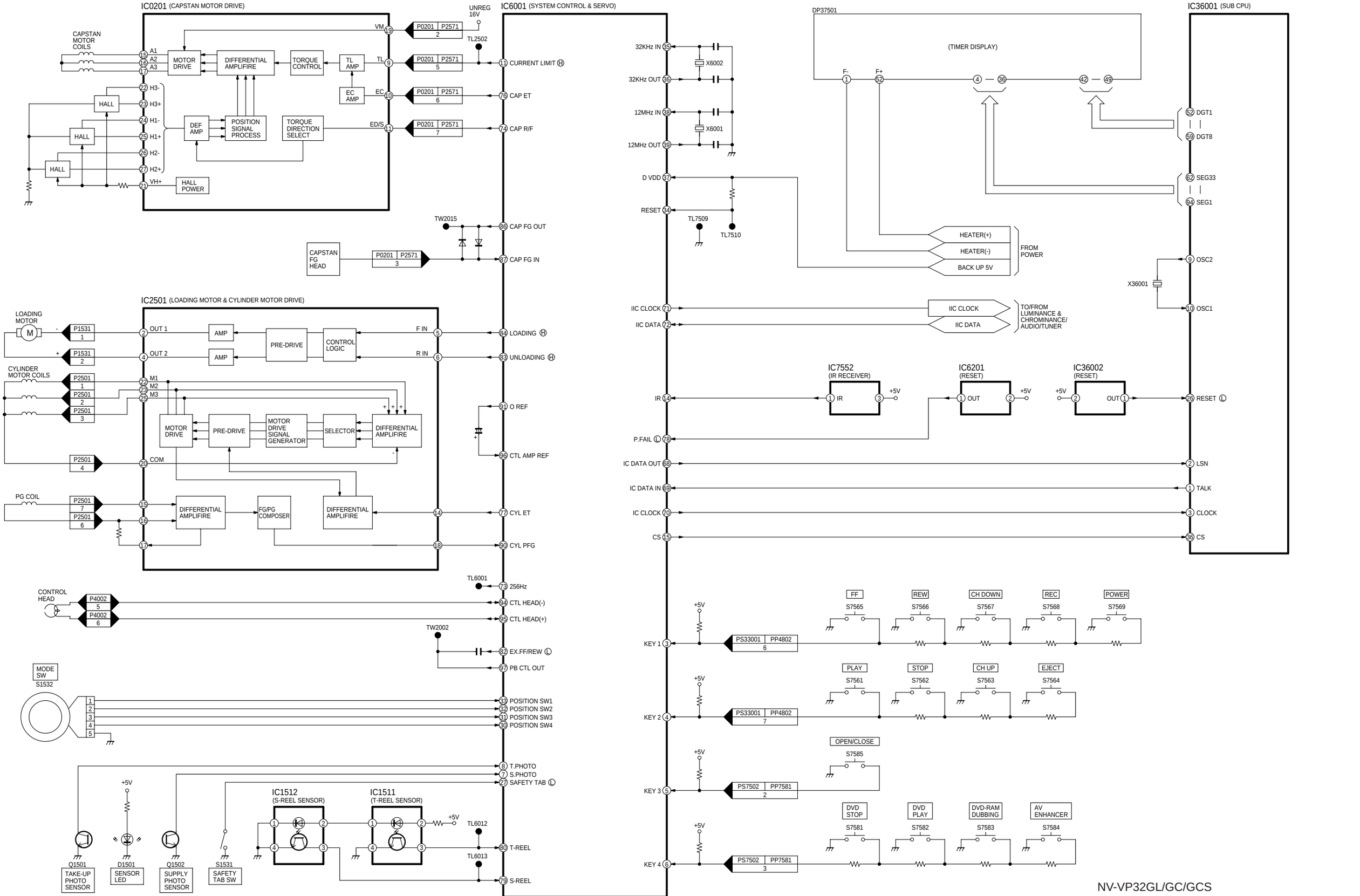
DVD AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



NV-VP32GL/GC/GCS
DVD INTERFASE BLOCK DIAGRAM



NV-VP32GL/GC/GCS
POWER BLOCK DIAGRAM



NV-VP32GL/GC/GCS
SYSTEM CONTROL & SERVO BLOCK DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

FROM TUNER
TUNER VIDEO

FROM DVD INTERFACE
DVD VIDEO IN

AV2 IN
JK4801
(FRONT JACK)
VIDEO IN

PP4802 PS33001 1

IC3001 (AUDIO/VIDEO SIGNAL PROCESSOR)

ATT -6dB
ATT -4dB
ATT -10dB
ATT -10dB
ATT -10dB

VIDEO AGC

SVHS
SVHS
ATP

HPF
2MHz LPF
ACC
CLEAR SYNC
FEED BACK CLAMP
VIDEO ALC

EXT
INT
FIXED TO INT IN THES MODELS BY PIN53

IC6001
OSD SIGNAL PROCESS

SQUELCH
NTSC/PAL CONVERTER
COLOUR KILLER
6dB AMP
C-SQUELCH
V-AMP
Q3001
BUFFER
Q7701
BUFFER
L7702, C7714
BPF
(GC/GCS)

MAIN CONV 2
MAIN CONV 1
C LPF2
VCA
C CCD
CCD LPF
4.43PAL → MPAL CONV DELAY
C LPF1

PILOT ADD
PILOT ERASE
BPF
B.D

GCL
Y-LPF
SECAM DELAY +SSEQ
SVHS+L SECAM
SVHS+L SECAM
NON-LINEAR DE-EMPHASIS
SQPB
SQPB
SQPB EQ

IC3701
FROM DVD INTERFACE
DVD VIDEO OUT
DVD OUT (H)

AV1 IN
VHS/DVD OUT
JK33001
(REAR JACK)
VIDEO OUT
VIDEO IN
TL3711
TL3712

TO TUNER
RFC VIDEO OUT

R(SVHS)
R(SVHS)
DO/REC
DO
GCL
GCL
LPF
Y-CCD DELAY

Y-NOISE REDUCTION
HP-NC TRAP-NC
PHASE COMPARATOR
DEH
NON-LINEAR EMPHASIS
ET LPF

APC SW
PB APC
KILLER
REC APC
ACC SW
ACC DET
CHROMA ACC DET

L3001, C3007
PEAKING FILTER
MAIN DE-EMPHASIS
REC FBC+ALC
PB AGC+APL

MAIN EMPHASIS CARRIER OFFSET W.C/D.C
fo/DEVIATION ADJUSTMENT
FM MODULATION
REC FILTER

SUB LPF
DEMO
DLIM
G-EQ

X3001
X3002
X'TAL VCO OSCILLATOR
2FSC
C CLOCK DRIVER
TO C CCD

SQPB
SQPB
SQPB DL
P-EQ
FM AGC
629MHz TRAP

INT
EXT
EXTERNAL PB LUMINANCE SIGNAL INPUT LINE (NOT USED IN THESE MODELS)

B.E
MIX LEVEL ADJUST
L SECAM
L SECAM
C-ACC:ON
THROUGH
CHROMA ACC
COLOUR KILLER
fh HPF CTL TRAP
REC TRAP/ Hi-FI TRAP
C-DELAY

NO FREC TRAP
FREC TRAP
L SECAM
L SECAM
LPF

REC MUTE
VCA
SP
SP

SP2
SP2
SP1
SP1
CH2
CH1

SP2
SP2
SP1
SP1
CH2
CH1

SP L
SP COM
SP R
P5001 6
P5001 5
P5001 4
TO/FROM DD CYLINDER VIDEO HEAD

LP/EP L
LP/EP COM
LP/EP R
P5001 3
P5001 2
P5001 1
TO/FROM DD CYLINDER VIDEO HEAD

TO/FROM SYSTEM CONTROL
IIC CLOCK
IIC DATA

TO SYSTEM CONTROL
S-VHS PB (H)
S-VHS DET

NV-VP32GL/GC/GCS
LUMINANCE & CHROMINANCE BLOCK DIAGRAM

For your safety please read the following text carefully

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstance should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

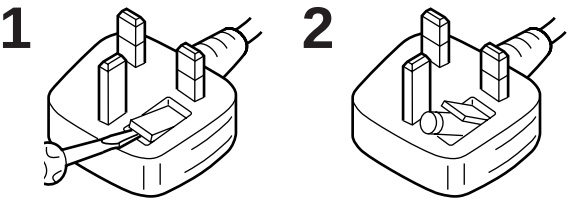
How to replace the Fuse

- There are two types of the AC Mains Lead assembly: **A** and **B** as shown below.

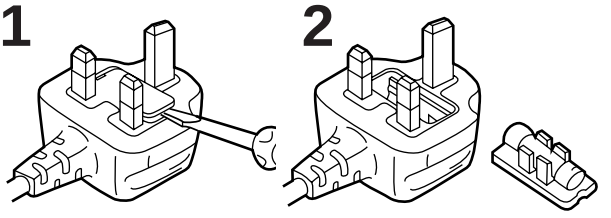
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

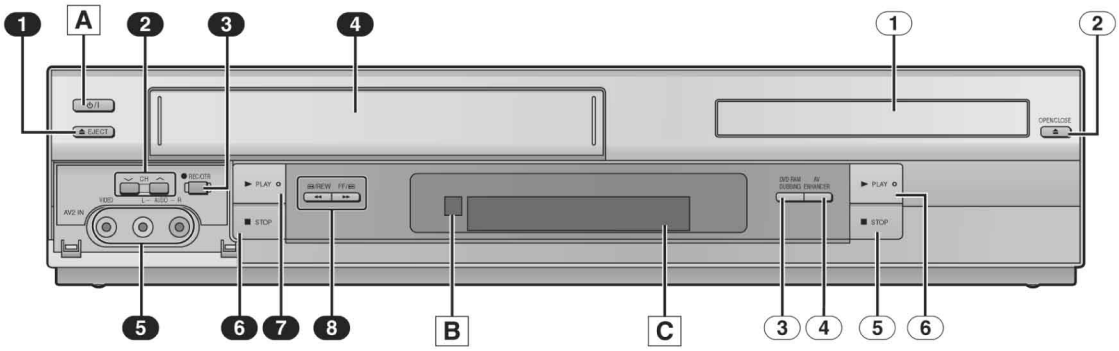
TYPE A



TYPE B



Main Unit



Common section

A **Power button (⏻/I)**
Press **[⏻/I]** to switch this unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the main AC power.

B **Infra-red remote control receiver window**

C **Display**

VHS section

1 **Tape eject button (▲EJECT)** ..... (➜ 14)

2 **Channel up/down buttons (CH∧∨)** ..... (➜ 15, 16)

3 **Recording/One-Touch Recording button (●REC/OTR)** ..... (➜ 16, 17)

4 **Cassette compartment**

5 **AV2 IN (AUDIO/VIDEO) sockets** ..... (➜ 17)

6 **STOP■ button** ..... (➜ 14)

7 **PLAY► button** ..... (➜ 14)

8 **Fast-forward/rewind buttons (◄◄/REW FF/►►, ◄◄ ►►)** ..... (➜ 14)

DVD section

1 **Disc tray**

2 **Disc tray open/close button (OPEN/CLOSE▲)** ..... (➜ 26)

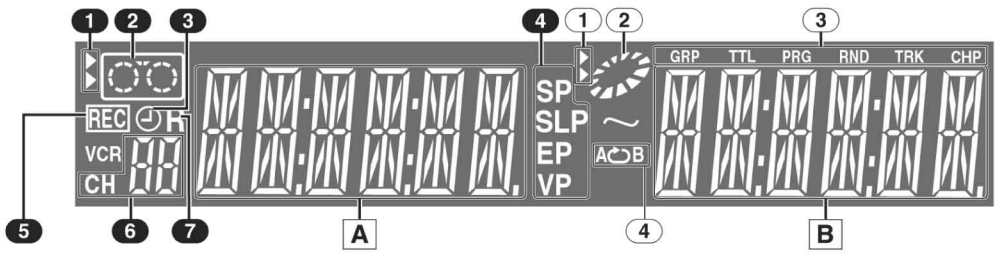
3 **DVD-RAM DUBBING button** ..... (➜ 42)

4 **AV ENHANCER button** ..... (➜ 29)

5 **STOP■ button** ..... (➜ 26)

6 **PLAY► button** ..... (➜ 26)

The Unit's Display



Common section

A **Main display**
- Current time/VHS recording and play counter/Timer recording start time/Miscellaneous messages, etc.

B **Main display**
- Disc play counter/Timer recording end time/Disc type (➜ 5)/ Miscellaneous messages, etc.

PL: play list number
PG: programme number
C: contents number (HighMAT discs ➜ 33)
G: group number (HighMAT discs ➜ 33)

VHS section

1 **VHS selector indicator**
- Lights up when the VHS section is active. It flashes for about 5 seconds immediately after selection is made.

2 **Operation status of VHS section**
Lights up when a cassette is inserted.
- Flashes when recording or timer recording is attempted with no cassette inserted.
- Displays play status graphically.
Rotating: playing
Stopped: paused

3 **Timer programme recording indicator** ..... (➜ 18)

4 **Recording mode indicator** ..... (➜ 16)

5 **Recording indicator** ..... (➜ 16)

6 **Channel display** ..... (➜ 16)

7 **Repeat playback indicator** ..... (➜ 14)

DVD section

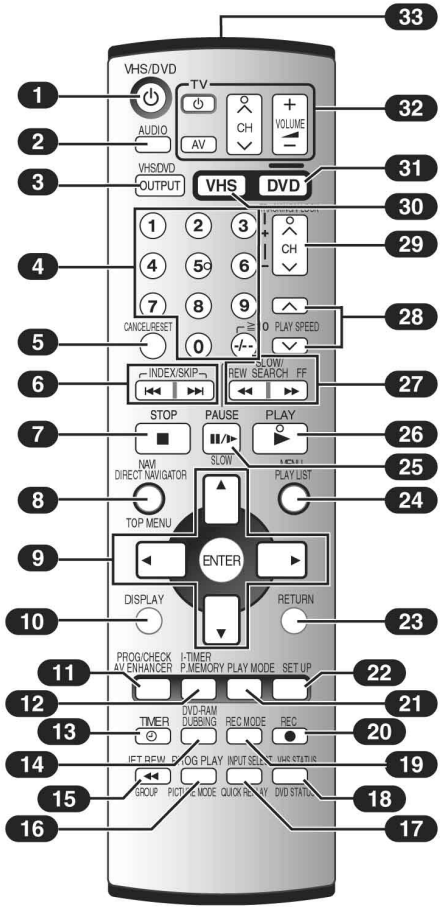
1 **DVD selector indicator**
- Lights up when the DVD section is active. It flashes for about 5 seconds immediately after selection is made.

2 **Operation status of DVD section**
- Lights up when a disc is inserted.
- Displays play status graphically.
Rotating: playing
Stopped: paused

3 **The display mode of the main display section**
GRP: group number
TTL: title number
PRG: Lights up during programme play.
RND: Lights up during random play.
TRK: track number
CHP: chapter number

4 **A-B repeat indicator**
- Lights up during A-B repeat play.
*During repeat play, only ↻ is lit.

Remote Control



■[DVD] and [VHS] button

[VHS]

- Switch the remote control mode and main unit's common output to VHS provided that OUT[VHS/DVD] section is AUTO.

[DVD]

- Switch the remote control mode and main unit's common output to DVD provided that OUT[VHS/DVD] section is AUTO.

1. **VHS/DVD Power button (VHS/DVD⏻)** .....(➜ 14, 26)
2. **Audio button (AUDIO)** .....(➜ 25, 34)
3. **VHS/DVD Output Switch button (OUTPUT, VHS/DVD)** .....(➜ 12)
4. **Numeric buttons (0–9, – /– –, ≧10)** .....(➜ 16, 27, 28)
5. **Cancel/Reset button (CANCEL/RESET)** .....(➜ 19, 25)
6. **Index Search, Skip buttons (INDEX/SKIP ⏮ ⏭)** .....(➜ 21, 26)
7. **Stop button (STOP■)** .....(➜ 14, 26)
8. **Jet Navigator, Direct Navigator/Top Menu button (NAVI, DIRECT NAVIGATOR, TOP MENU)** ..(➜ 20, 31, 32)
9. **Cursor, Enter button (▲▼◄ ►, ENTER)** .....(➜ 12, 22, 38, 40)
10. **Display/On-Screen Menu Icon button (DISPLAY)** .....(➜ 25, 38)
11. **Timer Programming and Check, AV Enhancer button (PROG/CHECK, AV ENHANCER)** .....(➜ 18, 19, 29)
12. **Intelligent Timer, Position Memory button (I-TIMER, P. MEMORY)** ..... (➜ 19, 27)
13. **Timer Recording button (TIMER◴)** .....(➜ 18)
14. **DVD-RAM Dubbing button (DVD-RAM DUBBING)** .(➜ 42)
15. **Jet Rewind, Group button (JET REW◄◄, GROUP)** .....(➜ 14, 28)
16. **Easy Programme Playback, Picture Mode button (PROG PLAY, PICTURE MODE)** .....(➜ 21, 29)
17. **Input Select, Quick Replay button (INPUT SELECT, QUICK REPLAY)**.....(➜ 17, 28, 42)
18. **VHS/DVD Status button (VHS STATUS, DVD STATUS)** .....(➜ 25, 26)
19. **Recording mode button (REC MODE)** .....(➜ 16)
20. **Recording button (REC●)** .....(➜ 16)
21. **Play mode button (PLAY MODE)** .....(➜ 38)
22. **DVD Setup menu button (SETUP)**.....(➜ 40)
23. **Return button (RETURN)** .....(➜ 13, 31, 35, 38, 40)
24. **Menu, Play List button (MENU, PLAY LIST)** .(➜ 12, 22, 31)
25. **Pause/Slow, Still button (PAUSE, SLOW❚❚/►)** ...(➜ 14, 26)
26. **Play button (PLAY►)** .....(➜ 14, 26)
27. **Rewind/Fast-Forward, Slow/Search buttons (REW, FF, SLOW, SEARCH◄◄ ►►)** .....(➜ 14, 26)
28. **Play Speed buttons (PLAY SPEED∧∨)** .....(➜ 30)
29. **Tracking/V-Lock and Channel up/down buttons (TRACKING/V-LOCK, CH∧∨)**.....(➜ 15, 16)
30. **VHS Select button (VHS)** .....(➜ LEFT)
31. **DVD Select button (DVD)**.....(➜ LEFT)
32. **TV Operation buttons**
    TV on/off button (TV⏻)
    TV Input Mode Selector (AV)
    Channel up/down buttons (TV, CH∧∨)
    Volume up/down buttons (TV, VOLUME+ −)
33. **Infra-red Transmitter**

No.	Terminal Name	I/O	Description	P. OFF	P. failure	Reset/ Releas
1	VSS		Unused terminal. Connected to GND. (Input taken as 0V)			
2	CODE1	I	Model setting terminal.	In	In	In
3	KEY1	I	AD Input terminal 1.	In	In	In
4	KEY2	I	AD Input terminal 2.	In	In	In
5	KEY3	I	AD Input terminal 3.	In	In	In
6	KEY4	I	AD Input terminal 4.	In	In	In
7	S-PHOT	I	Tape end detection Input terminal Input voltage:(1) >2.6V, Black tape (2) >2.4V, White tape	In	In	In
8	T-PHOT	I	Tape beginning detection Output terminal Input voltage: (1) >2.6V, Black tape (2) <2.4V, white tape	In	In	In
9	TRACKING_ENVE	I	Normal head Video Envelope Detecting Input Terminal Cylinder FG = 1 or 4 Base From Input time until PGMM time taken as reference time. Timing calculation is performed as follow. Normal head | Ref time + 90 degree time *90 degree time is defined as :NTSC : 8400us,PAL: 10000 us	In	In	In
10	PIC2	O	Control terminal for the picture mode.	Low	Low	Low
11	CURRENT.LIMIT	O	Capstan current limit control terminal (Output inpedance: Min:1K, TYP:2.5K, Max: 4.0K)	In DA=0V	Low	In DA=0V
12	EEPROM_CS	O	Navigator back-up EE PROM Chip Select terminal Active Low Output	Low	Low	Low
13	ART.V/H/N	O	Dummy V Output terminal However,during Recording Program Navigator writing, Hi-Z = Fixed.	Low	Low	Low
14	REMOCON	I	Remote control input terminal	In	In	In
15	OPECON_CS	O	CS(Chip Select) signal for TIMER micon Active = " H " Non-active = "L"	(Normal Opera-tion)	Low	Low
16	CLOCK.SLAVE(H)	O	1) In test mode: Timer Clock Adj [transmit mode] : H --> L Timer Clock Adj [receive mode] : L --> H 2) Other than test mode : always L	Low	Low	Low
17	DVD_OUT(H)	O	Common Output = For DVD, Output = High Common Output = For VCR, Output = Low As for DVD/VTR during P.Off, Output = Low	Normal Opera-tion	Low	Low
18	VIDEO.H.SW	O	Video Head Switch Signal (During L'/R = "H", during R'/L = "L") Cylinder FG= 1 or 4, Ref time taken as Input time until PGMM time. Timing calculation is performed based on the following. Normal Head | Ref time 10 u Head | Ref time + 120 degree time 1H (=64us) *120 degree time is defined as NTSC:11122us,PAL 13333us	Low	Low	Low
19	AUDIO.H.SW	O	Audio head switch signal	Low	Low	Low
20	D.REC(H)	O	Video Record Current timing terminal	Low	Low	Low
21	TEST2(L)	I	Test mode 2 setting terminal during test 2, Input = Low during normal, Input = High	In	In	In
22	PROGRESSIVE_TV (L)	I	Port for scanning line control: Scanning line 628 : H Scanning line 624 : L	Low	Low	Low
23	ABS_NORM(L)/A.ADJ	I	Serve as Forced Normal Selection Signal & Auto Adjustment Trigger Input Terminal to switch to forced normal audio, Input = Low (ADUBPS, during HiFi Audio Envelope decline Other than that, Input = High	In	In	In
24	AVR(L)	O	Simplified AI Playback Output terminal Initial condition: Input setting 1st Step : "L" setting	Hi-Z	Hi-Z	Hi-Z
25	PB×5(H)	O	Video circuit control signal 5 times mode playback, High Output Other than above, Low Output	Low	Low	Low